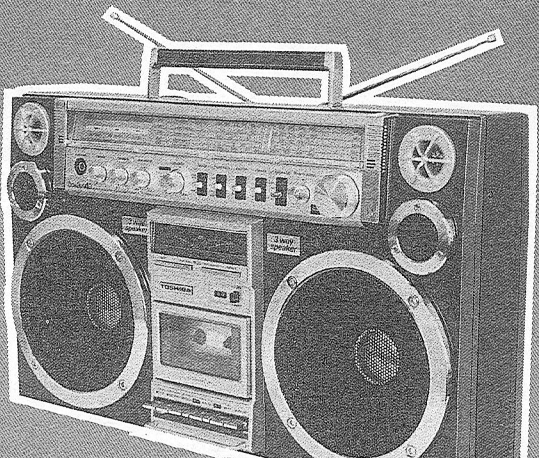
SERVICE DATA
FILE NO. 110-255

TOSHIBA
STEREO RADIO CASSETTE RECORDER
RT-S913



SPECIFICATIONS

Cassette Tape Used:	C-30, C-60, C-90, C-120
Tape Speed.	4.8 cm/sec.
Track System:	Four-track two channel stereophonic
Recording System.	AC bias (55kHz)
Erasing System:	Multipolar magnet erasing
Frequency Responce:	Normal 60 Hz – 10 kHz
Receiving Frequency:	FM, 88 – 108 MHz MW; 525 – 1605 kHz SW1; 1.6 – 4.5 MHz SW2; 4.5 – 12 MHz SW3; 12 – 28 MHz
Intermediate Frequency;	FM; 10.7 MHz MW; SW1 – SW3; 455 kHz
Antenna:	FM; SW1 – SW3; telescopic antenna MW, ferrite-core antenna
Speaker:	200 mm (dia) dynamic X 2 60 mm (dia) dynamic x 2 50 mm (dia) dynamic x 2

Jacks:	[MIC] jack x 2, Impedance 200 – 2K ohm [AUX] jack x 2, Impedance 50K ohm [LINE OUT] jack x 2, Impedance 12K ohm [EXT SP] jack x 2, Impedance 2.5 – 8 ohm [PHONES] jack headphone
Power Supply:	AC 110V-120V/220V-240V, 50/60 Hz DC 15V (SUM-1 "D" size x 10)
Power Consumption:	30 W
Dimensions (mm):	(W) 595 x (H) 352 x (D) 151
Weight:	7.3 kg (Without batteries)
Power Output:	10W x 2, Distortion 10%

Specifications are subject to change without notice.

VF

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POWER SUPPLY

- **Batteries (optional)**

Open the battery cover, insert ten dry cells (SUM-1 "D" size), observe correct polarity (+, –) indication.

- **To check the condition of the batteries**

When the set is turned on, the [BATTERY] indicator ⑭ should light up. If it fails to light, the batteries have run down, and all 10 batteries must be replaced with fresh SUM-1 "D" size batteries.

AC POWER

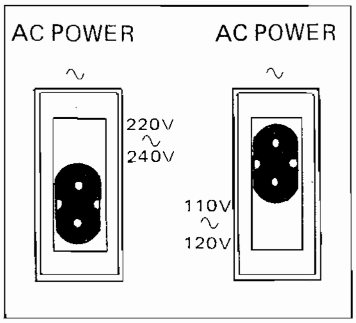
This unit operates on either household current of 110-120V AC or 220-240V AC. The [AC POWER] socket ㊵ located on the left-hand side is pre-set at 220-240V AC. Connect one end of the power cord to [AC POWER] socket ㊵ and the other end to an AC outlet.

Precautions on power source changeover

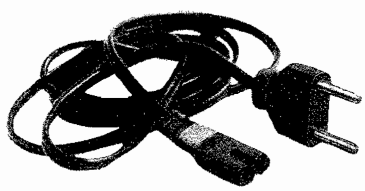
Prior to changing over the [AC POWER] socket ㊵, confirm the local voltage of the current to which this cassette recorder is to be connected. Should it be inadvertently connected to the wrong voltage, trouble may result.

To operate the set on 110-120V AC

Slide the cover of the [AC POWER] socket ㊵ upward and connect one end of the power cord to [AC POWER] socket ㊵ and other end to an AC outlet.



POWER CORD



1. OPERATING CONTROLS

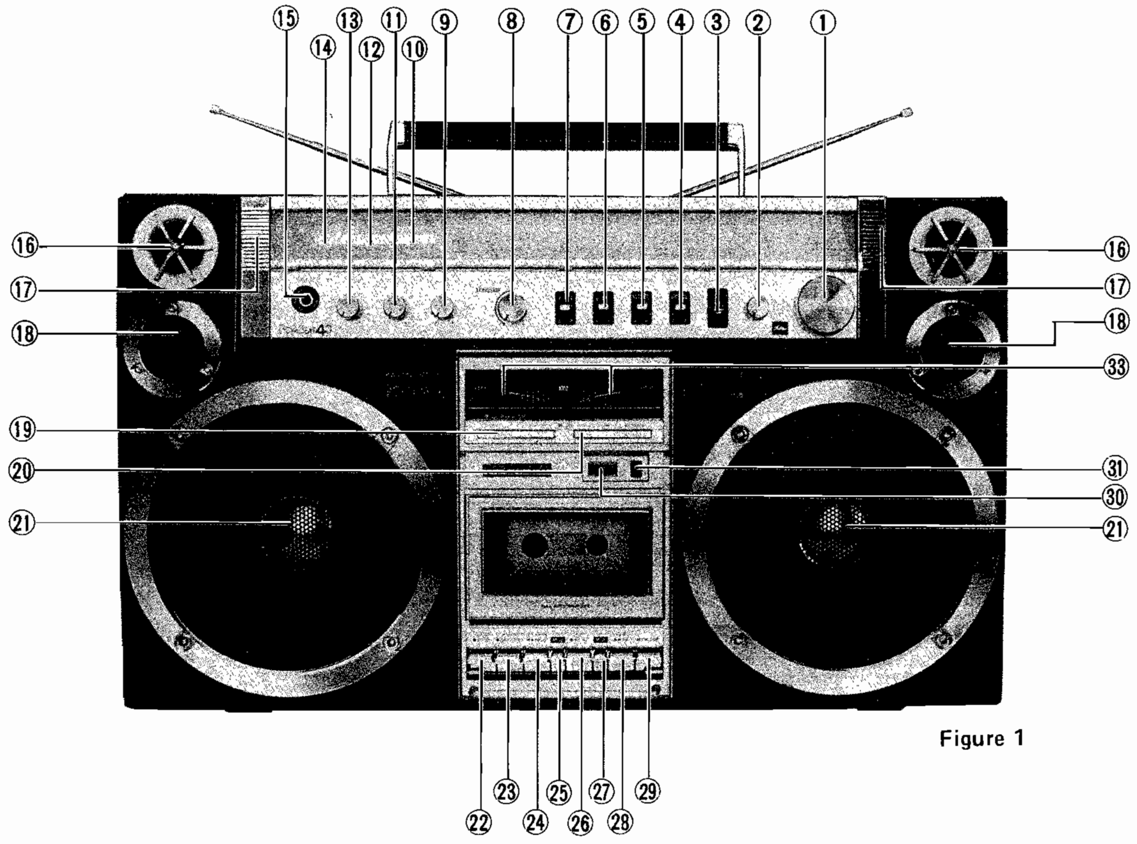


Figure 1

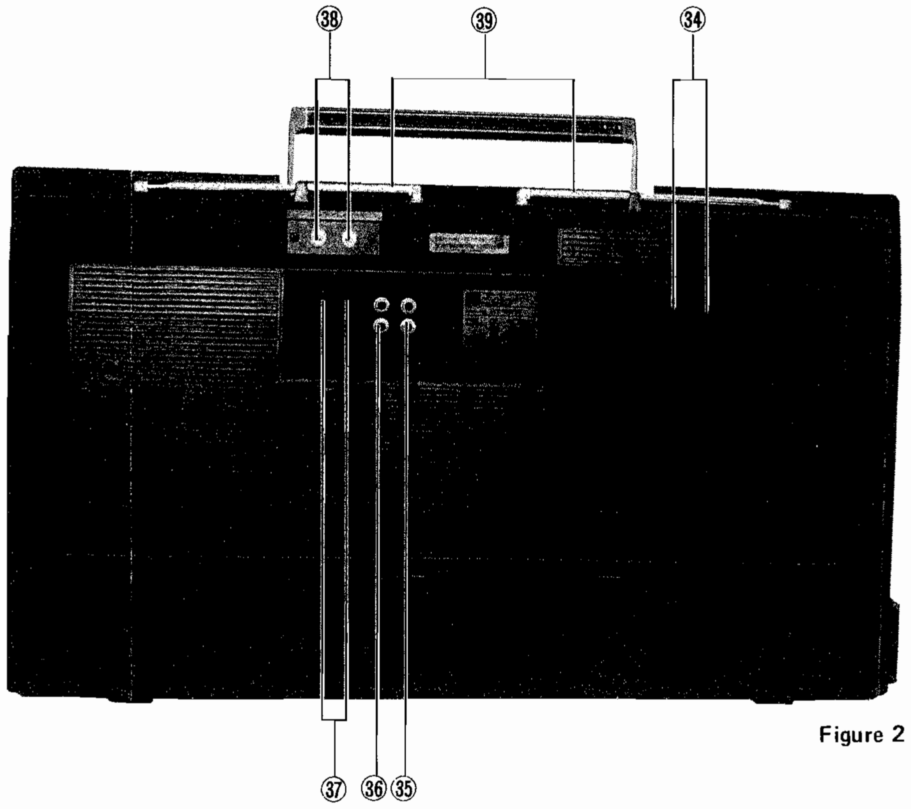


Figure 2

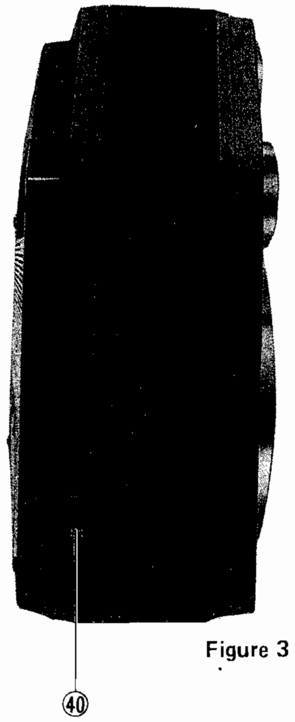


Figure 3

① **(TUNING) Knob**

② **(FINE TUNING) Control**
For fine tuning in the SW1, SW2 and SW3 bands.

③ **(AM BAND) Selector**
For selecting the MW, SW1, SW2 and SW3 bands.

④ **(BAND) Selector**
For selecting the FM or AM bands.

⑤ **(EDITOR) Switch**
If this switch is pressed when recording, the tape will continue to move passed the heads, but nothing will be recorded. Normal recording resumes when the switch is released.

⑥ **(FUNCTION) Selector**
Select the required program source by switching to the corresponding position.

TAPE	For tape playback, and recording via the built-in microphone and external microphones.
RADIO	For listening to radio broadcasts.
AUX	For auxiliary inputs such as a record player (ceramic type cartridge) connected to the rear panel terminals.

⑦ **(MODE) Selector**
Switch to the STEREO position for stereo listening, or to the MONO position for monaural listening. In the SPACE WIDE position, an even greater stereo effect is obtained.

⑧ **(VOLUME) Control**
Turn to adjust the volume level when listening on the speakers or headphones. In the low volume region marked LOUDNESS (thick line), the treble and bass tones are amplified to give more natural sound at low listening levels.

⑨ **(BALANCE) Control**
Turn this control to balance the volume levels from the left and right speakers. When this control is turned clockwise, the left speaker volume is reduced; when turned counter-clockwise, the right speaker volume is reduced.

⑩ **(TUNING) Indicator**
This indicator lights when a broadcasting station is tuned.

⑪ **(TREBLE) Tone Control**
Turn to adjust the amount of treble in the music.

⑫ **(FM STEREO Indicator)**
This indicator lights when an FM stereo broadcast is received (even when the MODE selector is in the MONO position).

⑬ **(BASS) Tone Control**
Turn to adjust the amount of bass in the music.

⑭ **(BATTERY) Indicator**
This indicator lights while the set is turned on as long as there is sufficient power in the batteries. (When AC mains power is used, the lamp stays on.)

⑮ **(PHONES) Jack**
To listen via a pair of headphones, connect to this jack. (Inserting the headphone plug automatically switches off the speakers.)

⑯ **Tweeters (Speakers for high-pitched sound)**

⑰ **Built-in Microphones**

⑱ **Mid-Range Speakers (for mid-range to high-pitched sound)**

⑲ **(MQJS SET) Button**

⑳ **(MQJS RESET) Button**

㉑ **Woofers (Speakers for low to mid-range sound)**

㉒ **(■ STOP/OPEN) Key**
To stop the tape, press this key once. To open the cassette compartment, press a second time.

㉓ **(● ONE TOUCH RECORD) Key**
When this key is pressed, the (▶ PLAY) key is automatically depressed, thereby starting recording.

㉔ **(◀◀ REW/REVIEW) Key**
For rapid rewinding of the tape. If it is pressed while the (▶ PLAY) key is still depressed, the tape will start to play again as soon as the (◀◀ REW/REVIEW) key is released.

㉕ **(Rewind MQJS) Key**
When this key is pressed with (▶ PLAY) key, the tape rewinds rapidly until a blank section of tape is reached, then the tape automatically stops for a moment, and then starts to play again from that position. (Note that the (◀◀ REW/-REVIEW) key is depressed automatically when this button is pressed.)

㉖ **(▶PLAY) Key**
Press this key to play recorded tapes.

㉗ **(Fast Forward MQJS) Key**
When this key is pressed with (▶ PLAY) key, the tape advances rapidly until a blank section of tape is reached, then the tape automatically stops for a moment, and then starts to play again from that position. (Note that the (▶▶FF/CUE) key is depressed automatically when this key is pressed.)

㉘ **(▶▶ FF/CUE) Key**
For rapid forward winding of the tape. If it is pressed while the (▶ PLAY) key is still depressed, the tape will start to play again as soon as this button is released.

㉙ **(❚❚ PAUSE) Key**
Press to stop the tape temporarily during recording or playback. Press a second time to resume the recording or playback.

㉚ **Tape Counter**
By taking note of the counter reading at the start of a recording, the start position can be easily located later to replay the recording.

㉛ **Counter Reset Button**
The tape counter can be reset to 000 by pressing this button.

㉜ **MQJS Indicators**

㉝ **(VU) Level Meter**
This meter indicates the recording level of both stereo channels during recording, and also the playback level when listening to tapes and to radio broadcasts.

㉞ **(EXT SP) Jacks**
External speakers (input impedance from 2.5 to 8 ohm) may be connected to these jacks.

㉟ **(LINE OUT) Jacks**
The output signal may be fed to an external amplifier. A cords with phono plugs (optional) should be connected to these jacks.

㊱ **(AUX) Jacks**
To record via an external stereo amplifier, connect a cord with phono plugs (optional) to these jacks.

㊲ **(MIC) Jacks**
Microphones with 3.5mm plugs (outside diameter) may be connected to these jacks.

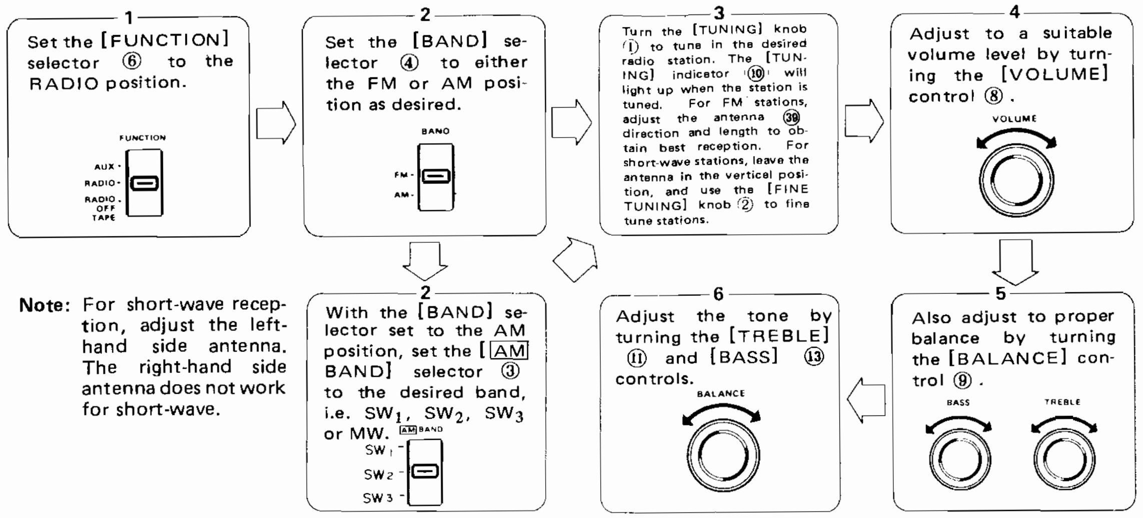
㊳ **FM External Antenna Terminal**

㊴ **Telescopic Antenna**
Adjust the direction and length of this antenna to obtain the optimum sound when listening to FM, and SW radio broadcasts.

㊵ **(AC POWER) Socket**

OPERATION

1 Listening to the Radio



1 Set the [FUNCTION] selector ⑥ to the RADIO position.

2 Set the [BAND] selector ④ to either the FM or AM position as desired.

3 Turn the [TUNING] knob ① to tune in the desired radio station. The [TUNING] indicator ⑩ will light up when the station is tuned. For FM stations, adjust the antenna ㊴ direction and length to obtain best reception. For short-wave stations, leave the antenna in the vertical position, and use the [FINE TUNING] knob ② to fine tune stations.

4 Adjust to a suitable volume level by turning the [VOLUME] control ⑧.

2 With the [BAND] selector set to the AM position, set the [AM BAND] selector ③ to the desired band, i.e. SW_1, SW_2, SW_3 or MW.

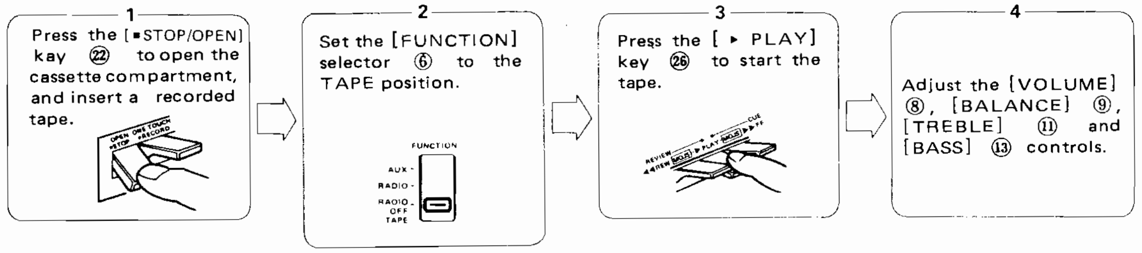
6 Adjust the tone by turning the [TREBLE] ⑪ and [BASS] ⑬ controls.

5 Also adjust to proper balance by turning the [BALANCE] control ⑨.

FUNCTION
AUX
RADIO
RADIO OFF TAPE
BAND
FM
AM
VOLUME
AM BAND
SW1
SW2
SW3
BALANCE
BASS
TREBLE

Note: For short-wave reception, adjust the left-hand side antenna. The right-hand side antenna does not work for short-wave.

2 Listening to Tapes



1 Press the [■STOP/OPEN] kay ㉒ to open the cassette compartment, and insert a recorded tape.

2 Set the [FUNCTION] selector ⑥ to the TAPE position.

3 Press the [▶ PLAY] key ㉖ to start the tape.

4 Adjust the [VOLUME] ⑧, [BALANCE] ⑨, [TREBLE] ⑪ and [BASS] ⑬ controls.

OPEN STOP
ONE TOUCH RECORD
FUNCTION
AUX
RADIO
RADIO OFF TAPE
REVIEW REW
MQJS
PLAY
CUE FF

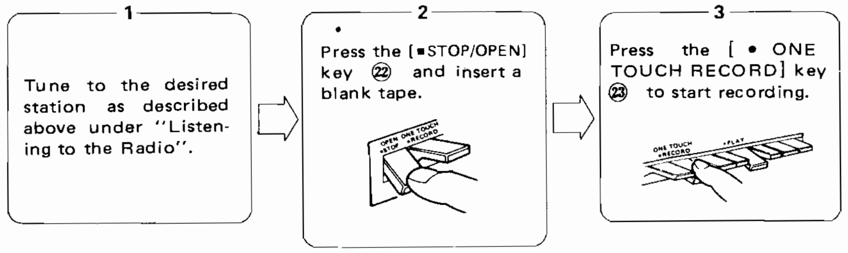
- If the [▶▶FF/CUE] key ㉘ or [◀◀REW/REVIEW] key ㉔ is pressed during playback, the tape will forward wind or rewind rapidly until a blank section of tape is reached. When it stops, a "click" will be heard. This is normal and does not indicate a fault.

Full Auto Shut-Off (ASO) Mechanism

When the end of the tape is reached during playback, recording, fast forward or rewind modes, the ASO mechanisms stops the tape automatically, and releases the depressed keys.

Note that if the [FUNCTION] selector ⑥ is in either the RADIO or AUX position, the power will not switch off automatically when the ASO mechanism is activated. To ensure that the power is turned off when the end of the tape is reached, set the [FUNCTION] selector ⑥ to the [OFF] position.

3 Recording Radio Broadcasts



1 Tune to the desired station as described above under "Listening to the Radio".

2 Press the [■STOP/OPEN] key ㉒ and insert a blank tape.

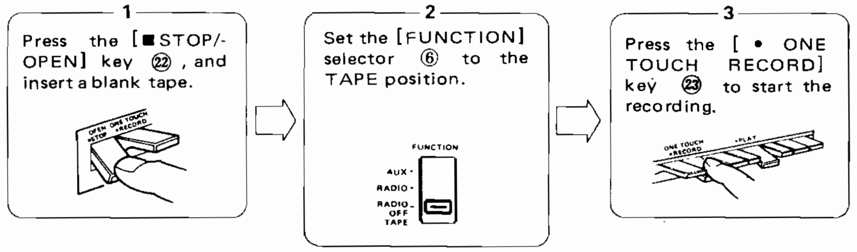
3 Press the [● ONE TOUCH RECORD] key ㉓ to start recording.

OPEN STOP
ONE TOUCH RECORD
PLAY

Since the RT-S913 has been designed with an automatic recording level adjustment circuit (ALC), a suitable recording level will be set automatically without any further operations.

Furthermore, this set also features a "variable monitor system" permitting the listener to change the listening volume without effecting the recording level.

4 Recording via Built-In Microphones



1 Press the [■STOP/OPEN] key ㉒, and insert a blank tape.

2 Set the [FUNCTION] selector ⑥ to the TAPE position.

3 Press the [● ONE TOUCH RECORD] key ㉓ to start the recording.

OPEN STOP
ONE TOUCH RECORD
FUNCTION
AUX
RADIO
RADIO OFF TAPE
PLAY

5 Recording with External Microphones

Plug external microphones (optional) into the MIC jacks in the rear of the set, and then proceed in exactly the same way as described above for the built-in microphones.

6 Recording from other Audio Equipment

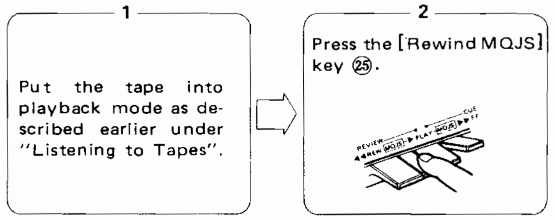
Connect an external amplifier or other audio equipment to the [AUX] jacks ㊱, set the [FUNCTION] selector ⑥ to the AUX position, and then proceed with steps 1 and 3 under Recording via Built-in Microphones, above.

THE MQJS (MUSIC QUICK JUMPING SELECTOR) MECHANISM

What is MQJS?

The MQJS mechanism is designed to seek blank portions of tape between sections of recorded tape, and then to automatically commence playing from a blank portion. In the RT-S913, the MQJS mechanism can jump up to 10 sections forward, or 9 sections backward, and automatically start playing a selected piece of music.

■ Repeated Listening to a Selected Tune

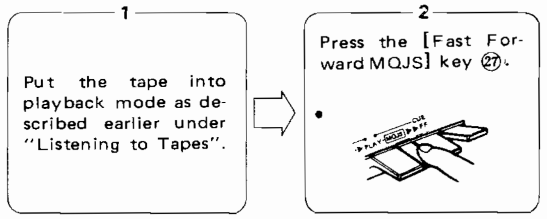


1 Put the tape into playback mode as described earlier under "Listening to Tapes".

2 Press the [Rewind MQJS] key ㉕.

REVIEW REW
MQJS
PLAY
CUE FF

■ Jumping the Present Tune to the Next



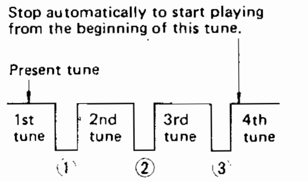
1 Put the tape into playback mode as described earlier under "Listening to Tapes".

2 Press the [Fast Forward MQJS] key ㉗.

CUE
PLAY
MQJS
FF

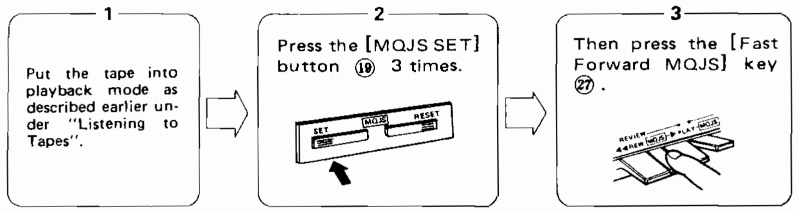
In the above two cases it is not necessary to press the [MQJS SET] button ⑲. (So consequently, the corresponding music selector indicator ㉜ will not light up).

■ Jumping the Present Tune to Listen to the 4th Tune Back



Stop automatically to start playing from the beginning of this tune.
Present tune
1st tune
2nd tune
3rd tune
4th tune
①
②
③

Number of blank portions between tunes (Number of jumped tune, in the case 3.)



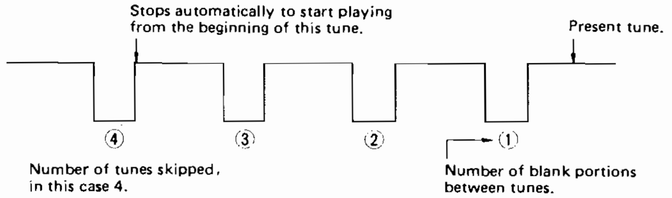
1 Put the tape into playback mode as described earlier under "Listening to Tapes".

2 Press the [MQJS SET] button ⑲ 3 times.

3 Then press the [Fast Forward MQJS] key ㉗.

SET
MQJS
RESET
REVIEW REW
MQJS
PLAY

■ Jumping the Present Tune to Listen to the 4th Tune Back



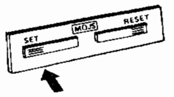
Stops automatically to start playing from the beginning of this tune.
Present tune.
④
③
②
①
Number of tunes skipped, in this case 4.
Number of blank portions between tunes.

1

Put the tape into playback mode as described earlier under "Listening to Tapes".

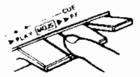
2

Press the [MQJS SET] button ⑲ 4 times.



3

Then press the [Rewind MQJS] key ㉕.



Note: When the [MQJS SET] button ⑲ was pressed incorrectly, press the [MQJS RESET] button ⑳, then perform the same procedure again.

Caution: The MQJS mechanism may fail to operate correctly in the following situations.

- When a blank (non-recorded) portion of tape is too short (less than 5 seconds).
- When a blank portion of tape contains noise.
- When a tune contains such pianissimo (very soft sound) or silence.
- When the batteries have run down.
- When the MQJS button is pressed accidently without pressing the [▶ PLAY] key ㉖ first (in which case, the tape will be switched to fast forward or rewind modes).
- Where the [Rewind MQJS] key ㉕ is pressed almost immediately after the start of a tune or where the [Fast Forward MQJS] key ㉗ is pressed just before the end of a tune (in which the case the tune following the next will be played instead of the next).

■ **Procedure of Recording Tape for MQJS**

- When recording from the radio or via microphones, make blank portions of tape between each recorded portion in the following way.

1 At the end of a recording, press the [EDITOR] switch ⑤ letting the tape continue moving for at least 5 seconds.

2 Then press the [II PAUSE] key ㉙ to stop the tape, and release the [EDITOR] switch ⑤ after the tape has stopped.

3 After a commercial or other unwanted announcements have finished, press the [II PAUSE] key ㉙ again to start recording again.

PLAYBACK MIXING

When optional external microphones are to be used, live sounds can be mixed with sound from a played-back tape. If only one microphone is available, connect it to the L channel jack—the sound will still be heard from both left and right speakers. (The external microphone jacks require 3.5mm plugs).

TIMER RECORDING

■ By connecting the RT-S913 to an audio timer (optional), radio programs can be recorded at any desired preset time.

1 Tune to the desired radio station as described earlier under "Listening to the Radio".

2 Insert a blank cassette tape in the compartment.

3 Set the audio timer to the desired recording start time, and then connect the RT-S913 power cord to the timer.

4 Press the [●ONE TOUCH RECORD] key ㉓.

5. At the preset time, the RT-S913 power will be switched on, and recording will start completely automatically.

Note: 1 The timer recording will not start at the preset time if the [II PAUSE] key ㉙ has been left set.

2 When the end of the tape is reached at the end of the recording, the full ASO mechanism will stop the tape and release the keys, but the radio power will remain on. In order to have the RT-S913 power supply completely switched off after a recording, an audio timer that has been designed to switch the power off again at the end of a recording must be used.

2. DISASSEMBLY INSTRUCTIONS

Front Panel Removal

1. Remove eleven knobs (A) as shown in Figure 4.
2. Remove two decoration screws (B) as shown in Figure 4.
3. Remove seven screws (C), (D), (E) and (F) as shown in Figure 5, 6, 7 and 8. Then the Front Panel can be removed from the unit.

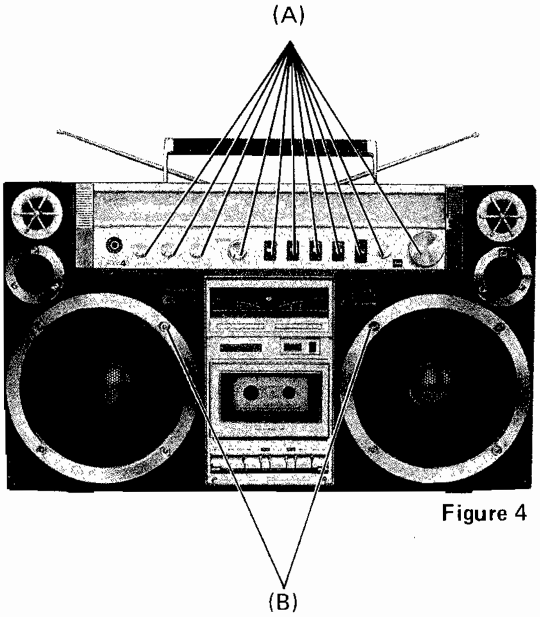


Figure 4

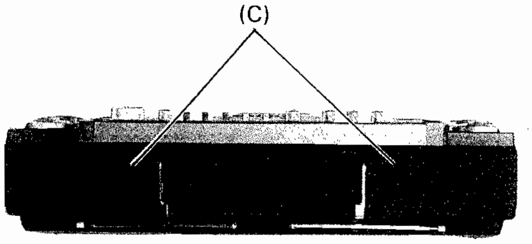


Figure 5

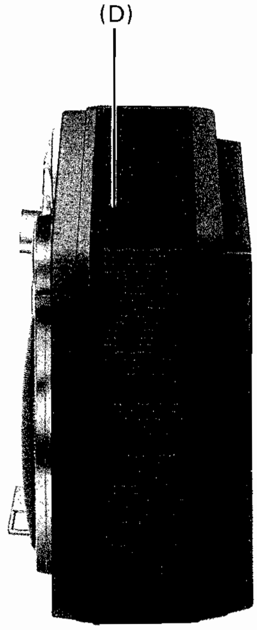


Figure 6

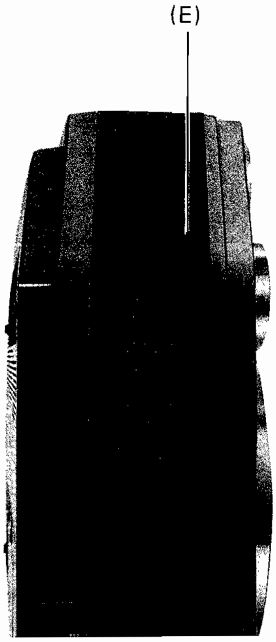


Figure 7

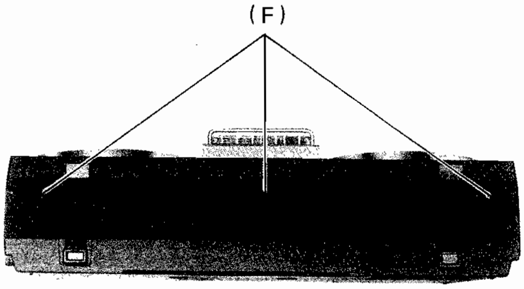


Figure 8

Main P.C. Board Removal

1. Remove four screws (G) as shown in Figure 9. Then, the Main P.C. Board can be removed from the unit.

Mechanical Assembly Removal

1. Remove four screws (H) as shown in Figure 9.

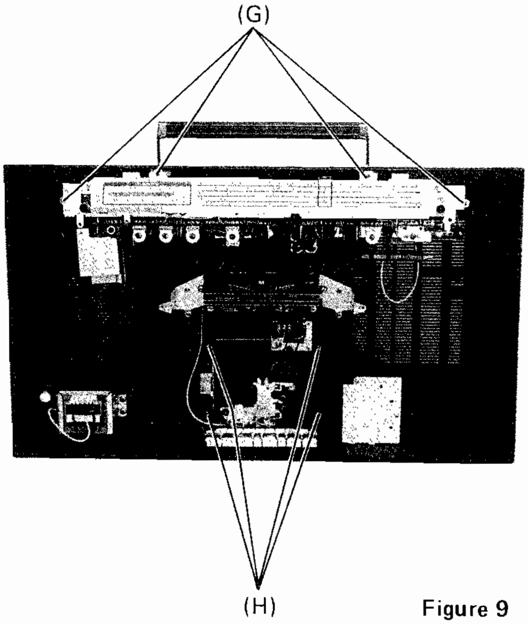


Figure 9

3. HANDLE REMOVAL

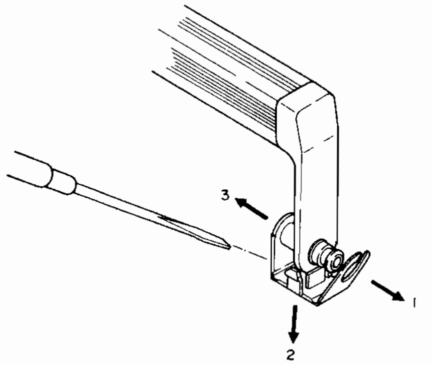


Figure 10

Handle Shaft removal

1. Remove the handle shaft in the numerical removal sequence indicated in the diagram.
2. When difficult to remove the handle shaft push open to the second direction with driver etc.

4. METHOD OF P.R.C REPAIRING

Cut defective printed-resistor-circuit off by knife. See Figure 11. Solder the replacement resistor (See replacement resistor parts list) on the opposite side of printed-circuit board. See Figure 12.

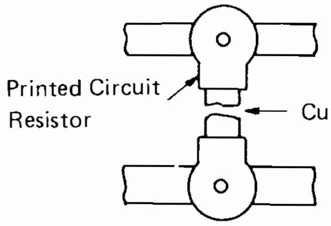

Printed Circuit Resistor
Cut Off

Figure 11

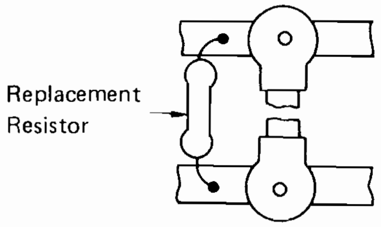

Replacement Resistor

Figure 12

5. DIAL CORD RESTRINGING

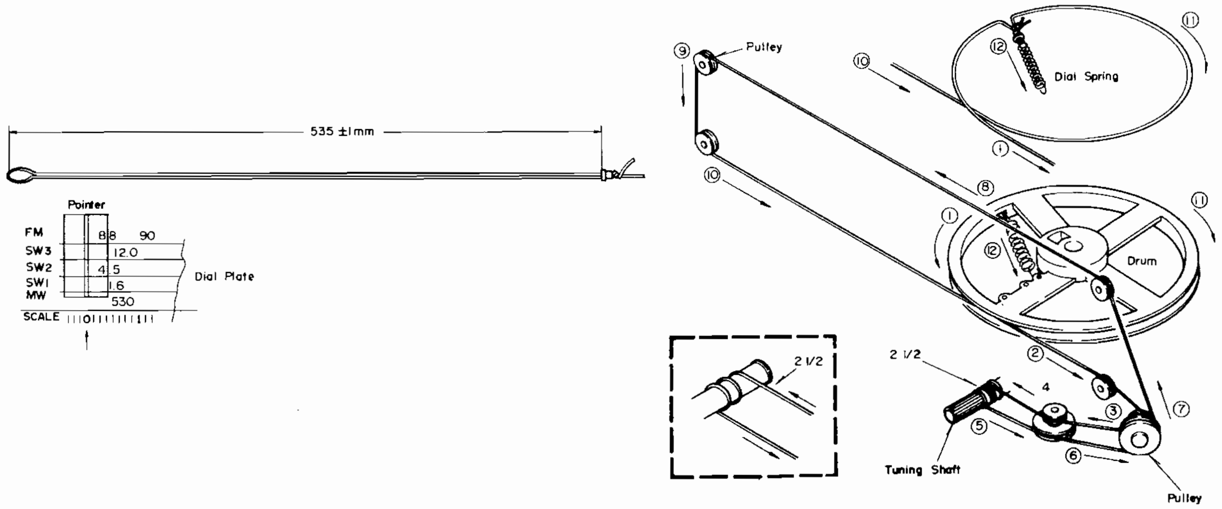

535 ±1mm
Pointer
FM
SW3
SW2
SW1
MW
SCALE
88
90
120
4
5
1.6
530
Dial Plate
Pulley
Dial Spring
Drum
2 1/2
Tuning Shaft
Pulley
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫

Figure 13

Dial cord restringing

1. Turn the shaft of variable capacitor fully counter clockwise.
2. Wind the dial cord in the numerical stringing sequence indicated in the diagram.
3. After restringing the dial cord, turn the tuning shaft counter clockwise, then set the dial pointer at " 0 " point on the scale.

6. BLOCK DIAGRAM

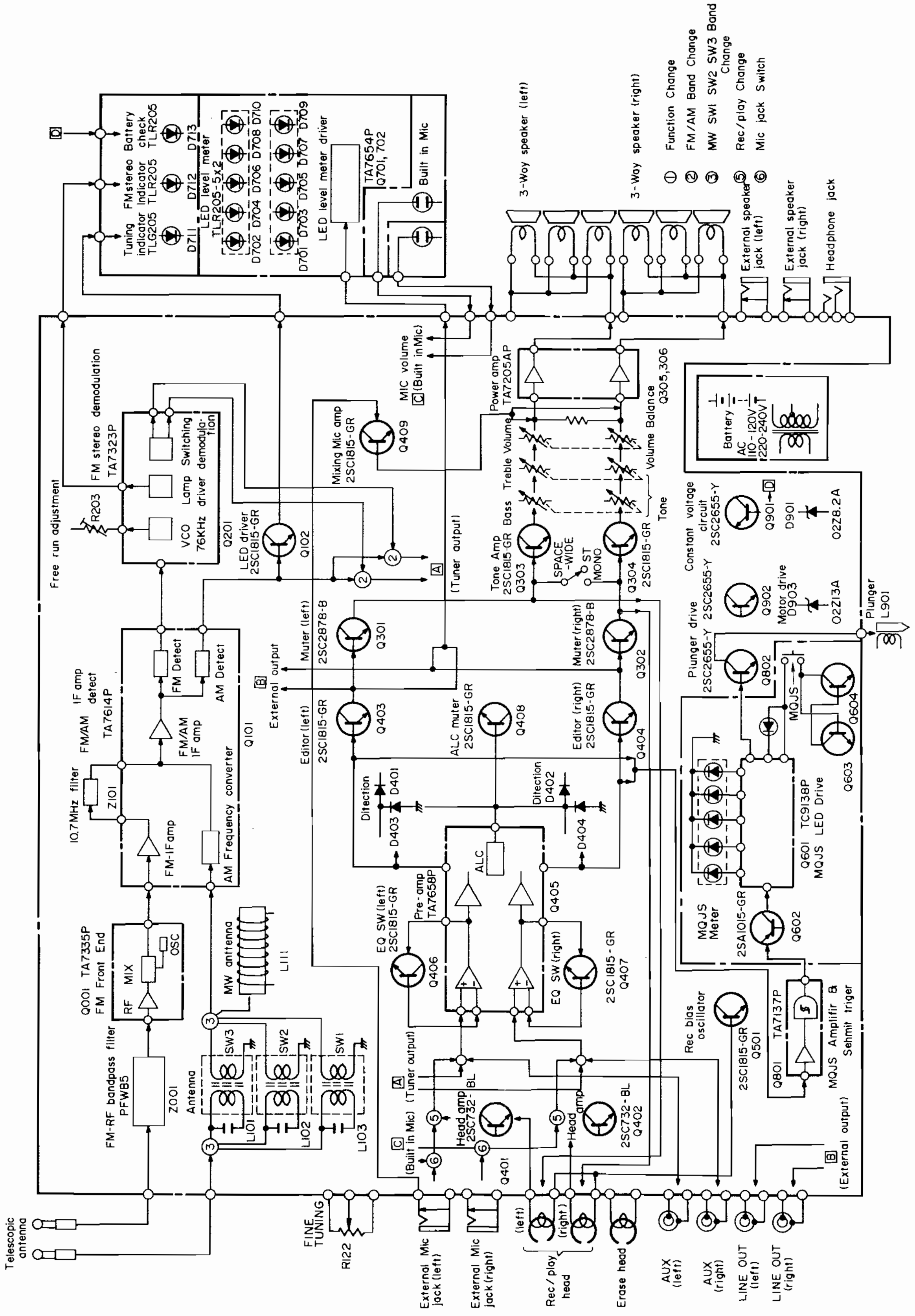

① Function Change
② FM/AM Band Change
③ MW SW1 SW2 SW3 Band Change
⑤ Rec/play Change
⑥ Mic jack Switch
3-Way speaker (left)
3-Way speaker (right)
External speaker jack (left)
External speaker jack (right)
Headphone jack
Tuning indicator TLG205
FMstereo indicator TLR205
Battery check TLR205
LED level meter TLR205-5x2
D701 D702 D703 D704 D705 D706 D707 D708 D709 D710 D711 D712 D713
LED level meter driver TA7654P Q701, 702
Built in Mic
MIC volume (Built in Mic)
Mixing Mic amp 2SC1815-GR Q409
Power amp TA7205AP
Volume Balance Q305,306
Treble Volume
Bass
Tone
Tone Amp 2SC1815-GR Q303
SPACE-WIDE
ST MONO
2SC1815-GR Q304
Battery
AC 110-120V 220-240V
Constant voltage circuit 2SC2655-Y Q901 D901 02Z8.2A
Motor drive 2SC2655-Y Q902 D903 02Z13A
Plunger drive 2SC2655-Y Q802
Plunger L901
MQJS Q603 Q604
Q601 TC9138P MQJS LED Drive
MQJS Meter 2SA1015-GR Q602
Rec bias oscillator 2SC1815-GR Q501
Q801 TA7137P MQJS Amplifir & Sehmit triger
(External output)
Free run adjustment R203
FM stereo demodulation TA7323P
VCO 76KHz
Lamp driver
Switching demodulation
Q201 LED driver 2SC1815-GR Q102
(Tuner output)
FM/AM IF amp detect TA7614P
FM Detect
AM Detect
FM/AM IF amp
FM-IF amp
AM Frequency converter
Q101
10.7MHz filter Z101
Q001 TA7335P FM Front End
RF MIX OSC
FM-RF bandpass filter PFWB5 Z001
MW antenna L111
Antenna
SW3 SW2 SW1
L101 L102 L103
Muter (left) 2SC2878-B Q301
Muter (right) 2SC2878-B Q302
External output
Editor (left) 2SC1815-GR Q403
Editor (right) 2SC1815-GR Q404
ALC muter 2SC1815-GR Q408
Direction D401 D403
Direction D402 D404
ALC
Pre-amp TA7658P Q405
EQ SW (left) 2SC1815-GR Q406
EQ SW (right) 2SC1815-GR Q407
Head amp 2SC732-BL Q401
Head amp 2SC732-BL Q402
(Built in Mic)
Telescopic antenna
FINE TUNING R122
External Mic jack (left)
External Mic jack (right)
Rec/play head (left) (right)
Erase head
AUX (left)
AUX (right)
LINE OUT (left)
LINE OUT (right)

Figure 14

7. ADJUSTMENT INSTRUCTIONS

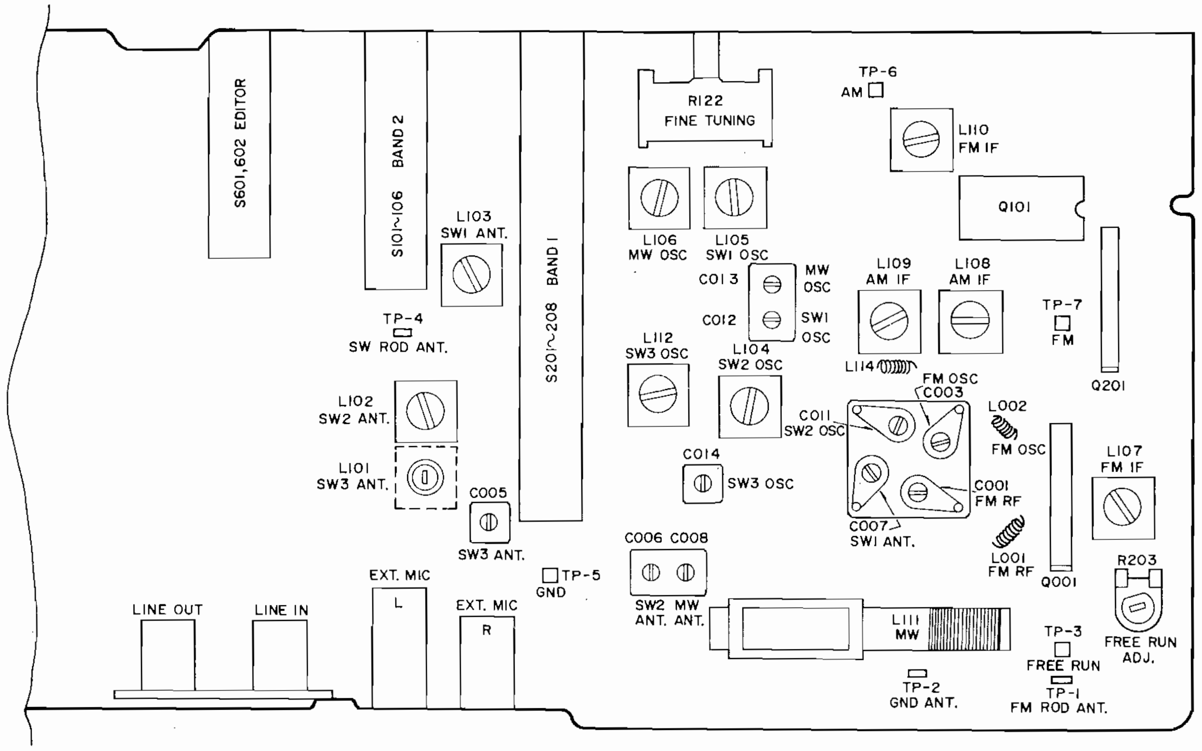

S601,602 EDITOR
S101~106 BAND 2
S201~208 BAND 1
L103
SW1 ANT.
TP-4
SW ROD ANT.
L102
SW2 ANT.
L101
SW3 ANT.
C005
SW3 ANT.
EXT. MIC
L
EXT. MIC
R
TP-5
GND
LINE OUT
LINE IN
R122
FINE TUNING
TP-6
AM
L110
FM IF
Q101
L106
MW OSC
L105
SW1 OSC
C013
MW OSC
C012
SW1 OSC
L109
AM IF
L108
AM IF
TP-7
FM
Q201
L112
SW3 OSC
L104
SW2 OSC
L114
FM OSC
C003
L002
FM OSC
C011
SW2 OSC
C014
SW3 OSC
C001
FM RF
L107
FM IF
C006 C008
SW2 ANT.
MW ANT.
C007
SW1 ANT.
L001
FM RF
Q001
R203
L111
MW
TP-3
FREE RUN
FREE RUN ADJ.
TP-2
GND ANT.
TP-1
FM ROD ANT.

Figure 15

TEST EQUIPMENT

1. Signal generator with a frequency range of at least from 455 kHz to 23 MHz AM.
2. Oscilloscope with a wide range amplifier of approximately 100 kHz.
3. Test loop – a coil of any size wire, one turn or more. (MW)
4. A 30-ohm dummy antenna. (SW1, SW2)
5. VTVM.

AM ALIGNMENT

1. Turn on the AM signal generator and the VTVM allowing a fifteen-minute warm-up period.
2. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
5. Set volume control at mid-position.
6. Proceed as outlined in the IF-MW and SW ALIGNMENT CHART.

MW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
IF	1	455 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	L108 L109	Adjust for maximum indication.
MW	2	510 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L106 (MW)	Adjust for maximum indication.
	3	1650 kHz	Tuning Gang Fully clockwise (Highest Frequency)	OSC. Trim C013	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L111 (MW)	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C008	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

SW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
SW1	1	1.55 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L105 (SW1)	Adjust for maximum indication.
	2	4.6 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C012	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	1.8 MHz	Tune to Signal.	Ant. Coil L103 (SW1)	Adjust for maximum indication.
	5	4 MHz	Tune to Signal.	Ant. Trim. C007	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			
SW2	1	4.4 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L104 (SW2)	Adjust for maximum indication.
	2	12.5 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C011	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	5 MHz	Tune to Signal.	Ant. Coil L102 (SW2)	Adjust for maximum indication.
	5	11 MHz	Tune to Signal.	Ant. Trim. C006	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
	1	11.5 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L112 (SW3)	Adjust for maximum indication.
SW3	2	28.5 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C014	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	14 MHz	Tune to Signal.	Ant. Coil L101 (SW3)	Adjust for maximum indication.
	5	24 MHz	Tune to Signal.	Ant. Trim. C005	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT from the signal generator through the loop antenna to the receiver.
4. Connect the oscilloscope vertical input directly to the test point TP-4 FM and connect the shielded lead to the test point TP-5 GND.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step	Signal coupling	Equip.	Tuning	Connection	Adjust. point	Pattern
1	Connect sweep generator output to a three-turn loop antenna of 10cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counter-clockwise (Lowest Frequency.)	Set scope for connecting output signal from TUN OUT to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	L107 L110	Turn the coil L110 fully counterclockwise to obtain a single peak. Fig. 17. Adjust coil L107 in order until the best single peak is obtained. Finally turn the coil L110 to obtain S curve. Fig. 18.

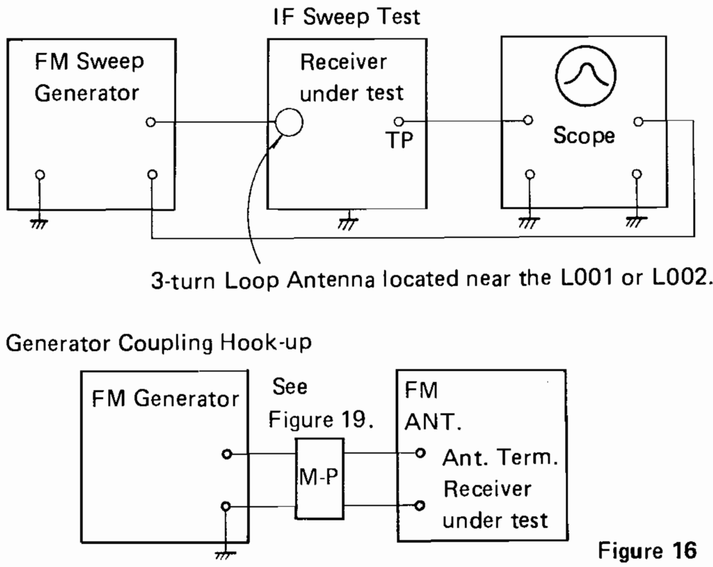

IF Sweep Test
FM Sweep Generator
Receiver under test
TP
Scope
3-turn Loop Antenna located near the L001 or L002.
Generator Coupling Hook-up
FM Generator
See Figure 19.
M-P
FM ANT.
Ant. Term.
Receiver under test

Figure 16

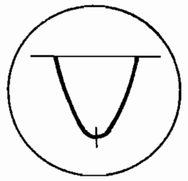


Figure 17

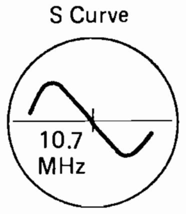

S Curve
10.7 MHz

Figure 18

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM ANT.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set the volume control to mid-position.
4. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RF ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	87.3 MHz	Tuning Knob fully Counterclockwise (Lowest Frequency)	OSC. Coil L002	Adjust for maximum output indication.
2	109 MHz	Tuning Knob fully Clockwise (Highest Frequency)	OSC. Trim. C003	Adjust for maximum output indication
3	Repeat steps 1 and 2 as required.			
4	90 MHz	Tune to signal	Ant. Coil L001	Adjust for maximum output indication
5	106 MHz		Ant. Trim. C001	
6	Repeat steps 4 and 5 as required.			

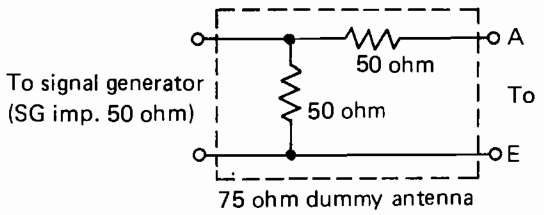

To signal generator (SG imp. 50 ohm)
50 ohm
50 ohm
A
E
To receiver
75 ohm dummy antenna

Figure 19

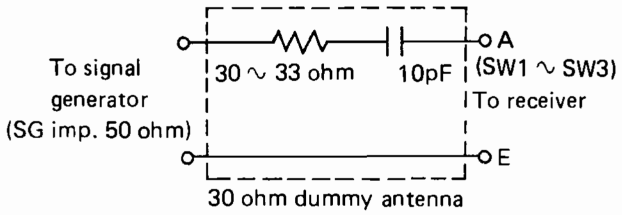

To signal generator (SG imp. 50 ohm)
30 ∿ 33 ohm
10pF
A
E
(SW1 ∿ SW3)
To receiver
30 ohm dummy antenna

Figure 20

FREE RUN FREQUENCY ALIGNMENT

Adjust R203 under no signal condition so as to obtain 76 kHz ±150 Hz.

RECORD/PLAYBACK HEAD ADJUSTMENT

A 6.3 kHz standard tape must be used for this adjustment. Connect a VTVM or an oscilloscope to the EXT Speaker jack and adjust the azimuth by using a philips screwdriver to maintain the maximum output voltage.

Caution in R/P Head Replacement

Losseness of the R/P head mounting hole and screw may cause clearance between the head and tape as shown in figure (A). In this case, MTSS function does not operate correctly. Therefore, adjust and fasten the screw by pushing the R/P head in the arrow direction as shown in figure (B). Do not proceed to adjust the head as shown in figure (C).

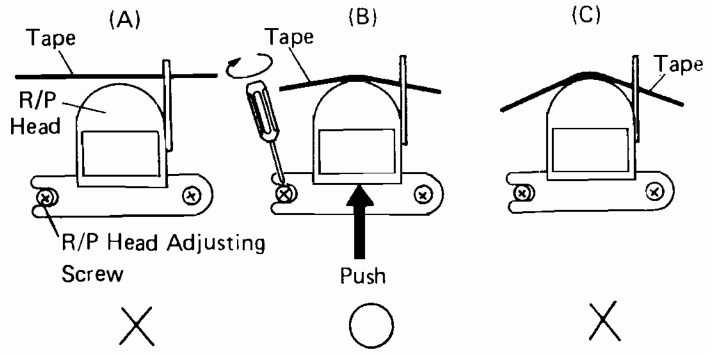

(A)
(B)
(C)
Tape
Tape
Tape
R/P Head
R/P Head Adjusting Screw
Push
X
○
X

Figure 21

8. ELECTRICAL PARTS LOCATIONS

Q101 (TA7614AP)

	1	2	3	4	5	6	7	8
FM	0V	0.06V	6.9V	0V	3.4V	6.9V	0V	1.2V
AM	0V	0.24V	7.1V	0V	3.5V	7.1V		
FM	6.4V	6.4V	6.4V	0.04V	0.78V	0V	0.78V	1.2V
AM	6.8V	6.8V	6.8V	2V	0V	1.4V	0V	
	16	15	14	13	12	11	10	9

Q405 (TA7658P)

8	9	10	11	12	13	14
0V	0V	1.15V	0V	4.5V	3.8V	—
0.5V	0V	1.15V	—	4.5V	4V	8.8V
7	6	5	4	3	2	1

Q801 (TA7137P)

1	2	3	4	5	6	7	8	9
2.7V	0.5V	1V	1.2V	0V	2.7V	1V	1.1V	8.7V

Q201 (TA7323P)

9	2.8V
8	2.8V
7	5.8V
6	0V
5	0V
4	5.6V
3	6.4V
2	5V
1	4.2V

Q001 (TA7335P)

9	2.5V
8	0V
7	4.2V
6	4.2V
5	0V
4	4.2V
3	4.2V
2	4.2V
1	3.4V

Q305, 306 (TA7205AP)

1	15V
2	15V
3	4.2V
4	8.6V
5	1.5V
6	3.6V
7	3.8V
8	1.2V
9	0V
10	7.4V

Q701, 702 (TA7654P)

1	2	3	4	5	6	7
0V	0V	0V	1.2V	1.2V	0V	6V
0V	7.4V	7.4V	7.4V	7.4V	7.4V	9.1V
14	13	12	11	10	9	8

Q601 (TC9138P)

9	10	11	12	13	14	15	16
6.8V	0V	0V	0V	0V	0V	0V	7V
6.8V	0V	0V	6.8V	3.2V	0V	0V	0V
8	7	6	5	4	3	2	1

Q602

E	8.2V
C	0V
B	7.2V

Q604

E	0V
C	0V
B	5.2V

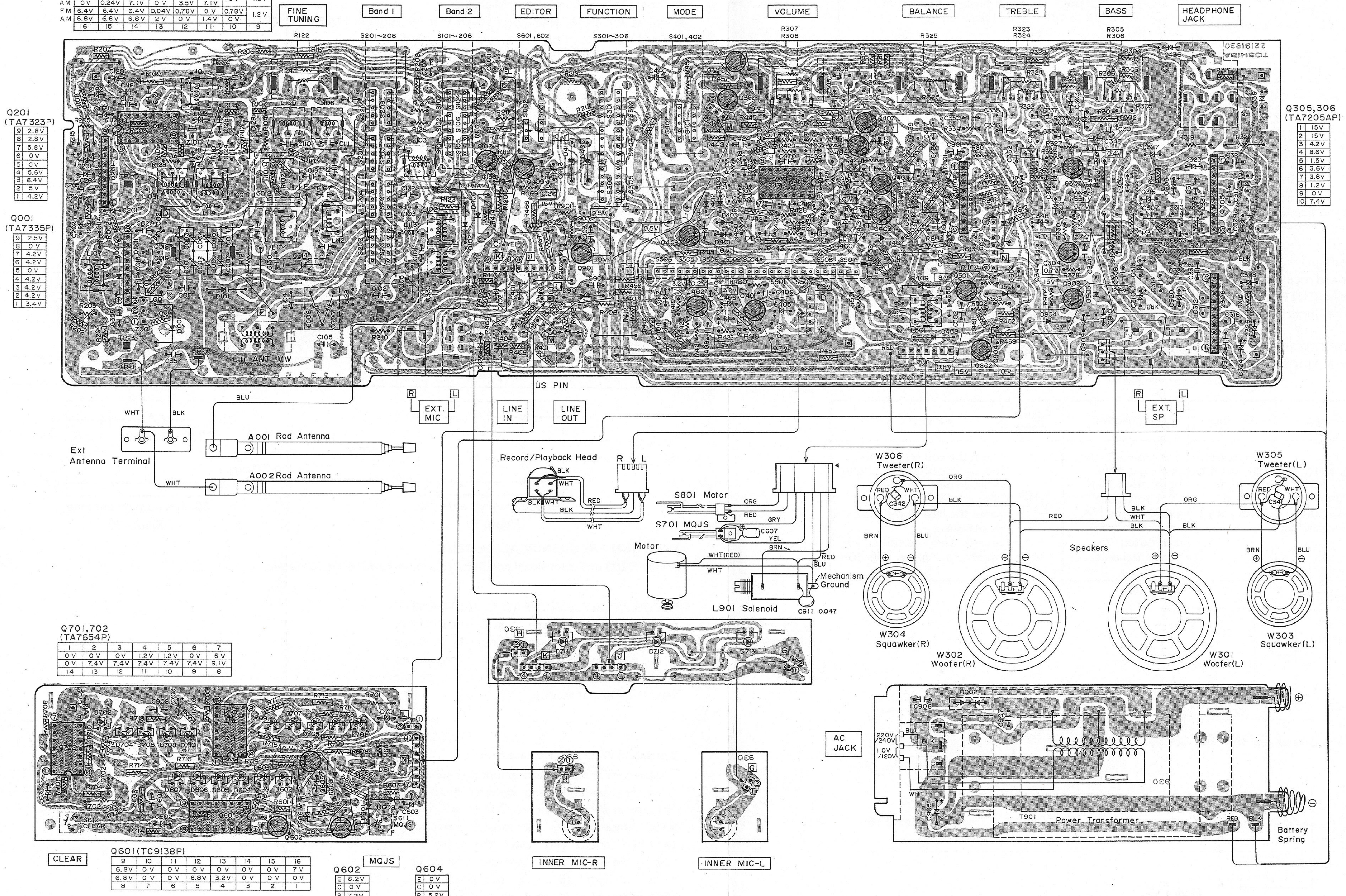

FINE TUNING
R122
Band 1
S201~208
Band 2
S101~206
EDITOR
S601, 602
FUNCTION
S301~306
MODE
S401, 402
VOLUME
R307
R308
BALANCE
R325
TREBLE
R323
R324
BASS
R305
R306
HEADPHONE JACK
TOSHIBA
US PIN
EXT. MIC
LINE IN
LINE OUT
EXT. SP
R
L
WHT
BLK
BLU
Ext Antenna Terminal
A001 Rod Antenna
A002 Rod Antenna
ANT MW
Record/Playback Head
S801 Motor
S701 MQJS
Motor
ORG
RED
GRY
YEL
BRN
WHT(RED)
Mechanism Ground
L901 Solenoid
C911 0.047
C607
W306 Tweeter(R)
W305 Tweeter(L)
C342
C341
Speakers
W304 Squawker(R)
W302 Woofer(R)
W301 Woofer(L)
W303 Squawker(L)
D711
D712
D713
INNER MIC-R
INNER MIC-L
AC JACK
220V /240V
110V /120V
D902
C906
C907
C905
T901
Power Transformer
Battery Spring
S612 CLEAR
S611 MQJS
Q601
Q602
Q604
Q701
Q702
CLEAR
MQJS

Figure 22

9. SCHEMATIC DIAGRAM

Q101

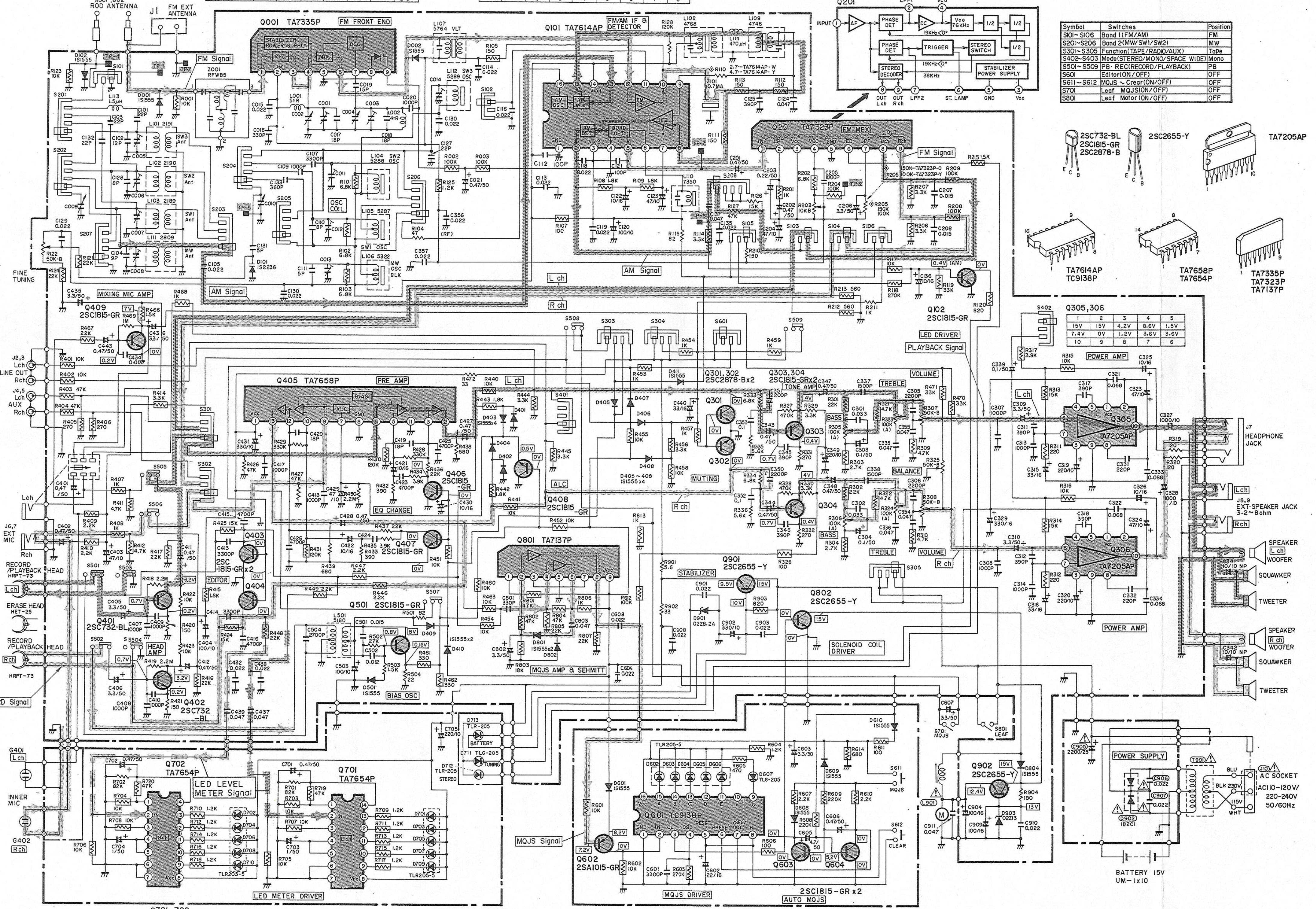
	16	15	14	13	12	11	10	9
FM	6.4V	6.4V	6.4V	0.04V	0.78V	0V	0.78V	1.2V
AM	6.8V	6.8V	6.8V	2 V	0V	1.4V	0V	
FM	0 V	0.06V	6.9V	0V	3.4V	6.9V	0V	1.2V
AM	0 V	0.24V	7.1V		3.5V	7.1V		
	1	2	3	4	5	6	7	8

Q001

1	2	3	4	5	6	7	8	9
3.4V	4.2V	4.2V	4.2V	0V	4.2V	4.2V	0V	2.5V

Q201

1	2	3	4	5	6	7	8	9
4.2V	5V	6.4V	5.6V	0V	0V	5.8V	2.8V	2.8V



Symbol	Switches	Position
S101~S106	Band 1(FM/AM)	FM
S201~S206	Band 2(MW/SW1/SW2)	MW
S301~S305	Function(TAPE/RADIO/AUX)	TaPe
S402~S403	Mode(STEREO/MONO/SPACE WIDE)	Mono
S501~S509	PB· REC(RECORD/PLAYBACK)	PB
S601	Editor(ON/OFF)	OFF
S611~S612	MQJS ~ Crear(ON/OFF)	OFF
S701	Leaf MQJS(ON/OFF)	OFF
S801	Leaf Motor (ON/OFF)	OFF

Q305,306

1	2	3	4	5
15V	15V	4.2V	8.6V	1.5V
7.4V	0V	1.2V	3.8V	3.6V
10	9	8	7	6

Q405

1	8.8V
2	4V
3	4.5V
4	—
5	1.15V
6	0V
7	0.5V
8	0V
9	0V
10	1.15V
11	0V
12	4.5V
13	3.8V
14	—

Q701, 702

1	2	3	4	5	6	7
0V	0V	0V	1.2V	1.2V	0V	6V
0V	7.4V	7.4V	7.4V	7.4V	7.4V	9.1V
14	13	12	11	10	9	8

Q801

1	2	3	4	5	6	7	8	9
2.7V	0.5V	1V	1.2V	0V	2.7V	1V	1.1V	8.7V

Q601

16	15	14	13	12	11	10	9
7V	0V	0V	0V	0V	0V	0V	6.8V
0V	0V	0V	3.2V	6.8V	0V	0V	6.8V
1	2	3	4	5	6	7	8

Figure 23

CAUTION:

The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

10-1. MECHANISM EXPLODED VIEW (UPPER)

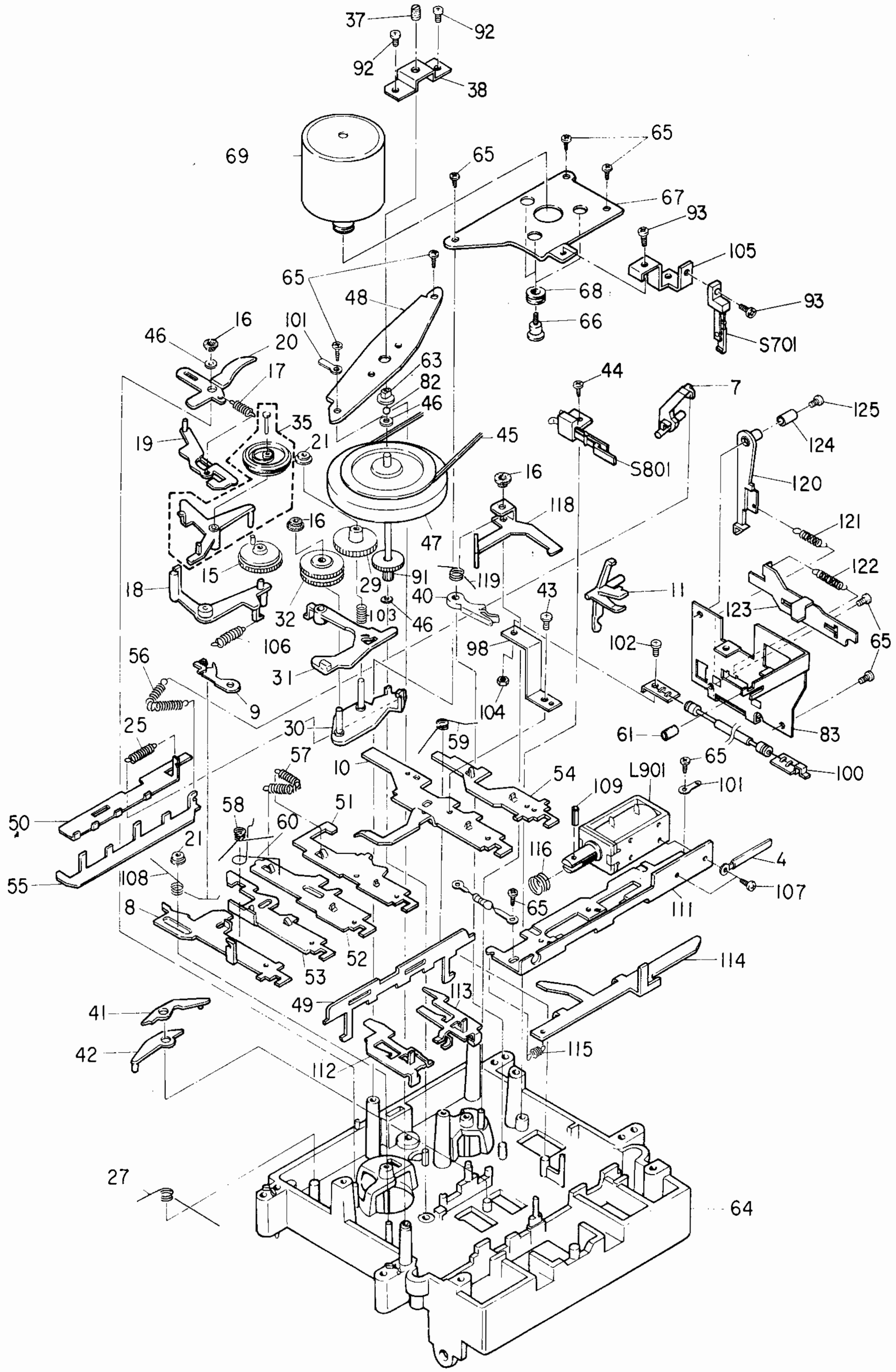

37
92
92
38
69
65
65
67
93
105
65
48
68
66
93
S701
46
16
101
20
17
63
82
46
44
7
125
19
35
21
45
16
S801
124
120
118
16
47
121
15
91
119
18
29
40
43
11
122
32
103
46
123
106
102
65
56
98
31
9
104
25
30
59
61
83
57
10
54
L901
65
101
100
109
50
58
51
60
21
116
4
108
107
55
8
65
111
52
53
114
49
113
41
115
42
112
27
64

Figure 24

NOTE: Parts excluded in the parts list are not available as replacement parts.

10-2. MECHANISM EXPLODED VIEW (LOWER)

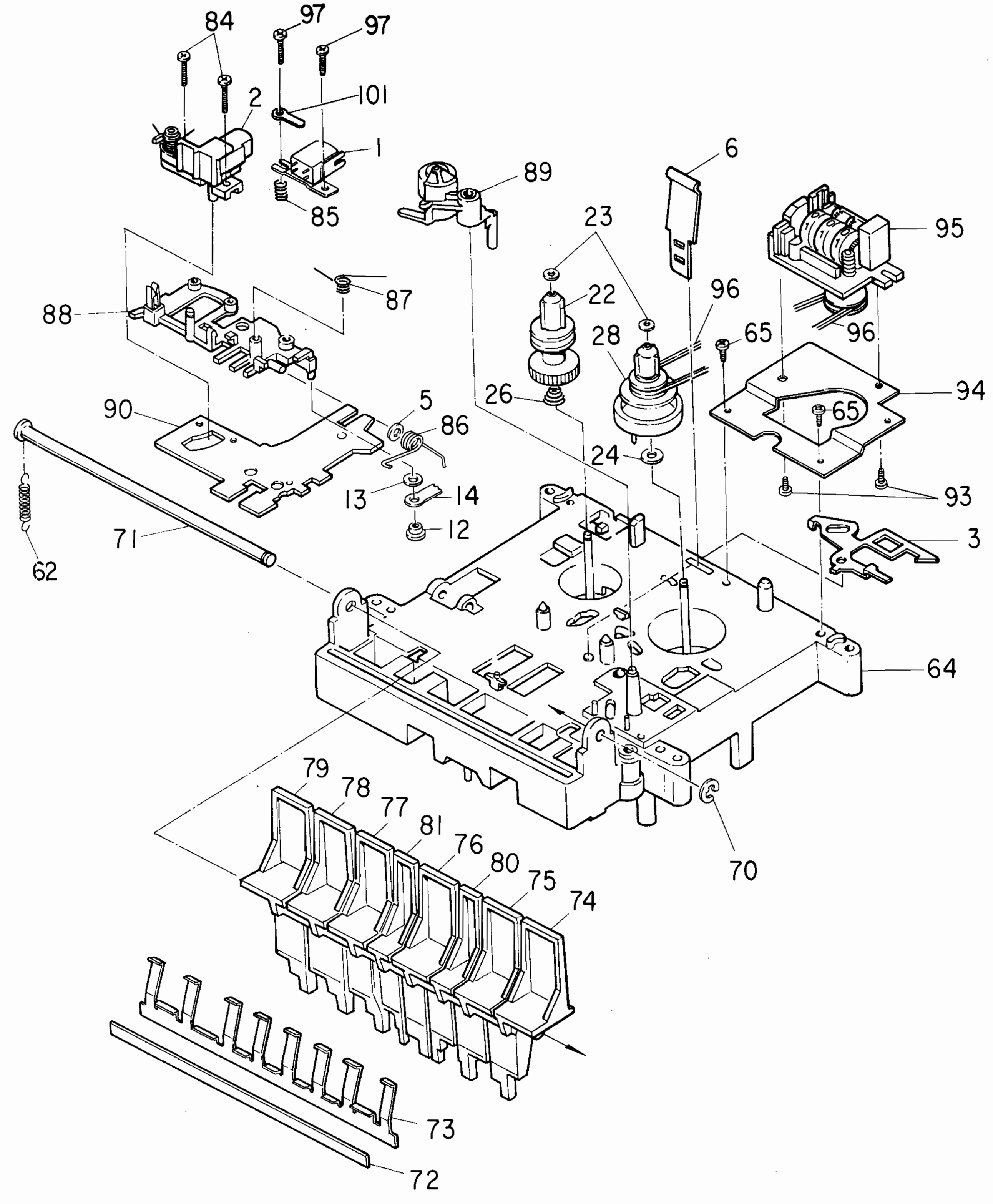

84
97
97
2
101
1
6
89
85
23
95
87
88
22
96
28
96
65
26
90
5
86
94
65
24
13
14
93
12
71
3
62
64
79
78
77
81
76
80
75
74
70
73
72

Figure 25

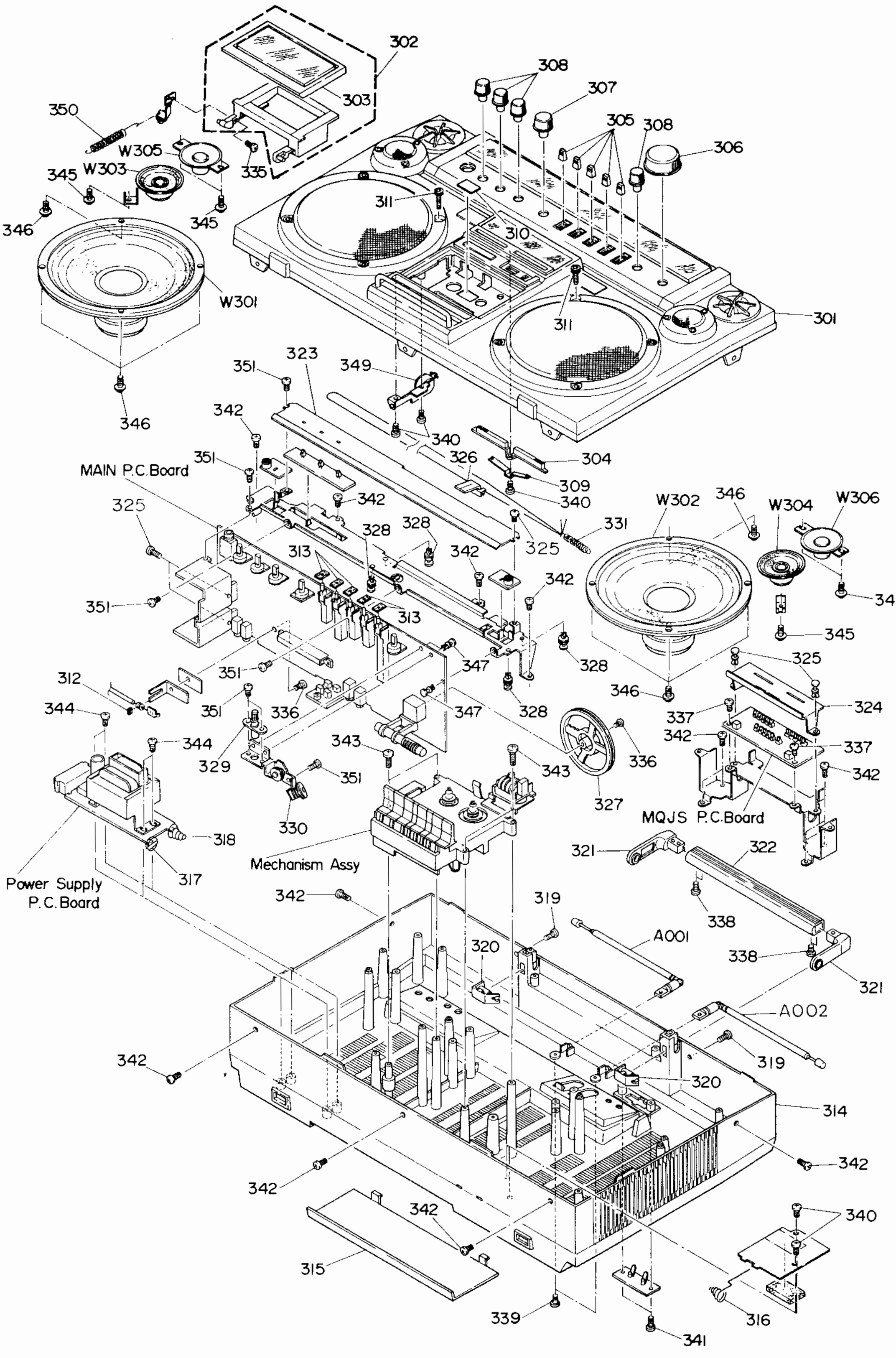
NOTE: Parts excluded in the parts list are not available as replacement parts.

10-3. MECHANISM PARTS LIST

Symbol No.	Part No.	Description
1	22217351	Head, Record/Playback
2	25791013	Head Ass'y, Erase
5	25764550	Washer, 3.6φ
7	25782374	Lever, Eject
9	25782173	Lever, Pause Lock
11	25782248	Lever, Record Lock
12	25725376	Boss
13	25764476	Washer
14	25782246	Lever, Waiting
15	25756253	ASO Gear
16	25783226	Bush
17	25776043	Spring
18	25782247	ASO Lever
19	25782332	Detector Lever
20	25782333	Swing Lever
21	25783195	Bush
22	25754338	Hub Plate, Supply
23	25764549	Washer, 1.7φ
24	25764566	Washer
25	25771617	Spring
26	25772578	Spring, Back Tension
27	25773442	Spring, Idler
28	25712367	Hub Plate, Take-up
29	25756179	High-speed Gear
30	25782251	Lever, Rewind
31	25782252	Lever, Fast Forward
32	25791339	High-speed Gear Ass'y
35	25791350	Idler Ass'y, Take-up
40	25782275	Lever, Record Stop
41	25782364	Review Lever
42	25782365	Cue Lever
43	22707617	Screw, 2.6φ x 6mm, DTPAN
44	22701326	Screw, 3φ x 8mm, BID Tapping
45	25755335	Belt, Drive
46	25764398	Washer, 2.5φ
47	25717391	Flywheel Ass'y
49	25732340	Stop Plate
56	25771955	Spring, Lock Slider
57	25771956	Spring
58	25773484	Spring
59	25773369	Spring
60	25773405	Spring, Crick
61	25761354	Cushion, Arm
62	25776215	Spring
63	25725429	Holder, Flywheel
65	22707301	Screw, 2.6φ x 8mm, BID Tapping
66	22707429	Screw, 2.6φ x 1.8mm x 4.9mm

Symbol No.	Part No.	Description
68	25761238	Cushion, Motor
69	25791133	Motor Ass'y
70	22703280	E Washer, 4φ
72	25761403	Cushion, Button
73	25779061	Spring, Button
74	25837415	Button, Pause
75	25837416	Button, Fast Forward
76	25837417	Button, Play
77	25837418	Button, Rewind
78	25837419	Button, Record
79	25837420	Button, Stop
80	25837421	Button, MQJS Fast Forward
81	25837422	Button, MQJS Rewind
82	25757120	Steel Ball
84	22707322	Screw, 2φ x 10mm, DTBID
85	25772585	Spring, Azimuth
86	25773365	Spring, Head Slider
87	25773366	Spring, Pressure Roller
88	25783224	Retainer, Head
89	25717392	Pressure Roller Ass'y
91	25751579	Gear, Flywheel
92	22707350	Screw, 2.6φ x 5mm, DTBID
93	22707300	Screw, 2.6φ x 6mm, BID Tapping
95	25873196	Counter
96	25755387	Belt, Counter
97	22707602	Screw, 2φ x 10mm, DTBID
100	25719461	Remote Wire Ass'y
102	22707473	Screw, 2.6φ x 6mm, BID
103	25772584	Spring, Spacer
104	25720130	Nut, 2.6φ
106	25771610	Spring, Eject
107	22707475	Screw, 2.6φ x 4mm, BID
108	25773486	Spring, Pause Lock
109	22707183	Spring Pin, Solenoid
112	25741776	Slider, MQJS Fast Forward
113	25741777	Slider, MQJS Rewind
114	25741778	Slider, MQJS Lock
115	25771450	Spring, Take-up Lever
116	25772321	Spring, Solenoid
119	25773477	Spring, Muting Switch Lever
120	25782404	Eject Lever
121	25776175	Spring
122	25771617	Spring
124	25733504	Spacer, Eject Lever
125	22707535	Screw, 2.6φ x 12mm, BID

11-1. CABINET EXPLODED VIEW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W305
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W303
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MAIN P.C.Board
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W302
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W304
W306
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MQJS P.C.Board
330
318
321
322
Mechanism Assy
317
Power Supply
P.C. Board
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A001
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A002
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Figure 26

NOTE: Parts excluded in the parts list are not available as replacement parts.

11-2. CABINET PARTS LIST

Symbol No.	Part No.	Description
301	25881153	Front Cabinet Ass'y
302	25881091	Cassette Cover Ass'y
303	25838678	Cassette Cover
304	25837597	Button, MQJS
305	25837354	Knob, Lever Switch
306	25837551	Knob, Tuning
307	25837552	Knob, Volume
308	25837553	Knob, Tone
309	25779188	Spring, MQJS
310	25824247	Reflector
311	22707702	Decoration Screw
312	25761354	Cushion, Arm
313	25858387	Switch Cover
314	25881154	Back Cabinet Ass'y
315	25881201	Battery Cover Ass'y
316	25771897	Spring, Battery (+, –)
317	25772570	Spring, Battery (+)
318	25772571	Spring, Battery (–)
319	22707628	Screw, 3ϕ x 10mm, DTBID
320	25835439	Shaft, Handle
321	25835437	Holder, Handle
322	25835449	Handle
323	25828949	Dial Plate
324	25828950	Decoration Plate, MQJS
325	22705021	Rivet, Plastic 3ϕ x 3.5mm
326	22741301	Pointer Ass'y
327	22742201	Drum
328	22742218	Pulley Assy
329	22749212	Tuning Shaft Ass'y
330	22749302	Tuning Shaft Retainer Ass'y
331	25771548	Spring
335	22707368	Screw, 2.6ϕ x 10mm, DTBID
336	22707473	Screw, 2.6ϕ x 6mm, BID
337	22707066	Screw, 3ϕ x 6mm, BID
338	22701325	Screw, 3ϕ x 8mm, BID, BLK
339	22701452	Screw, 3ϕ x 12mm, BID, BLK
340	22701326	Screw, 3ϕ x 8mm, BID, Tapping
341	22707165	Screw, 3ϕ x 10mm, BID, Tapping
342	22707118	Screw, 3ϕ x 12mm, BID, Tapping
343	22701246	Screw, 3ϕ x 30mm, BID, Tapping
344	22707472	Screw, 4ϕ x 12mm, BID
345	22701436	Screw, 3ϕ x 8mm, TPAN
346	22701434	Screw, 3ϕ x 10mm, TPAN
347	22705022	Rivet, Plastic, 3ϕ x 5.5mm
349	22749305	Damper Ass'y
350	25776326	Spring, Damper
351	22707452	Screw, 3ϕ x 5mm, BID

12. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
IC'S, TRANSISTORS & DIODES		
Q001		IC, TA7335P
Q101		IC, TA7614AP-Y-W/Y
Q201		IC, TA7323P-O/Y
Q301, 302		Transistor, 2SC2878-B
Q303, 304		Transistor, 2SC1815-GR
Q305, 306		IC, TA7205AP
Q401, 402		Transistor, 2SC732-BL
Q403, 404		Transistor, 2SC1815-GR
Q405		IC, TA7658P
Q406, 407 408, 409		Transistor, 2SC1815-GR
Q501		Transistor, 2SC1815-GR
Q601		IC, TC9138P
Q602		Transistor, 2SA1015-GR
Q603, 604		Transistor, 2SC1815-GR
Q701, 702		IC, TA7654P
Q801		IC, TA7137P-STY
Q802		Transistor, 2SC2655-Y
Q901, 902		Transistor, 2SC2655-Y
D001, 002		Diode, 1S1555V
D101		Diode, 1S2236
D401, 402 403, 404 405, 406 407, 408 409, 410 411		Diode, 1S1555V
D501		Diode, 1S1555V
D601		Diode, 1S1555V
D602, 603 604, 605 606		Diode, TLR205-5
D607		Diode, TLG205
D608, 609 610		Diode, 1S1555V
D701, 703		Diode, TLR205-5
D705, 707 709		Diode, TLR205-5
D702, 704 706, 708 710		Diode, TLR205-5
D711		Diode, TLG205
D712, 713		Diode, TLR205
D801, 802 804		Diode, 1S1555V
D901		Diode, 02Z6.8A
⚠ D903		Diode, 1B201
D904		Diode, 02Z13A
COILS & TRANSFORMERS		
L001	22294003	Coil, FM RF
L002	22294016	Coil, FM Oscillator
L101	22282191	Coil, SW3 Antenna
L102	22282190	Coil, SW2 Antenna
L103	22282189	Coil, SW1 Oscillator
L104	22285288	Coil, SW2 Oscillator
L105	22285287	Coil, SW1 Oscillator
L106	22245322	Coil, MW Oscillator
L107	22265764	IF Transformer, FM
L108	22264768	IF Transformer, AM
L109	22264746	IF Transformer, AM
L110	22267350	IF Transformer, FM
L111	22242809	Coil, MW Antenna
L112	22285289	Coil, SW3 Oscillator
L113	22291103	Coil, Choke, 1.5 μH
L114	22230106	Coil, Choke, 470 μH
L501	22235180	Bias Oscillator Coil
⚠ L801	22147211	Solenoid Coil
⚠ T901	22223962	Transformer, Power
ELECTRICAL PARTS		
A001, 002	22124700	Rod Antenna
G401, 402	22154225	Microphone Unit
J1	22162484	Terminal, 2P, Antenna
J2, 3 4, 5	22163789	Jack, US4P, LINE OUT AUX
J6	22163668	Jack, 3.5ϕ, MIC-L
J7	22163666	Jack, 3.5ϕ, MIC-R
J8	22163778	Jack, 6ϕ, Headphone

Symbol No.	Part No.	Description
J9, 10	22163666	Jack, 3.5ϕ, EXT Speaker
⚠ J11	22167849	AC Socket, 3P
S101, 102 103, 104 105, 106	22195351	Switch, Lever, Band, FM/AM
S201, 202 203, 204 205, 206 207, 208	22195500	Switch, Lever, Band, MW/SW1/SW2/SW3
S301, 302 303, 304 305	22195808	Switch, Lever, Function TAPE/RADIO/AUX
S401, 402	22195290	Switch, Lever,Mode MONO/ ST/WIDE
S501, 502 503, 504 505, 506 507, 508 509	22195468	Switch, Slide, RECORD/PLAYBACK
S601	22195522	Switch, Lever, EDITOR
S611	22195519	Switch, Key, MQJS
S612	22195519	Switch, Key, CLEAR
S701	22195603	Switch, Leaf, MQJS
S801	22195555	Switch, Leaf, MOTOR
W301, 302	22152361	Speaker 20cm, Woofer
W303, 304	22152362	Speaker, 6cm, Squawker
W305, 306	22152278	Speaker, 5cm, Tweeter
Z001	22153121	Filter, FM RF
Z101	22153122	Filter, Ceramic

CAPACITORS

D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%,
Z = −20 + 80%
ABBREVIATIONS: CD = Ceramic Disk, EL = Electrolytic, MY = Mylar, BL = Barrier Layer, PP = Polypropylene, NP = Non Polarity

Symbol No.	Part No.	Description
C001, 002 003, 004 007, 009 010, 011	22308426	Variable, VC-4-20/335
C005	22309157	Trimmer, Max 10pF
C006, 008	22309149	Trimmer, Max 10pF x 2
C012, 013	22309149	Trimmer, Max 10pF x 2
C014	22309157	Trimmer, Max 10pF
C015	22342223	CD, 0.022mfd, 50V, Z

Symbol No.	Part No.	Description
C016	22362331	CD, 330pF, 50V, K
C017	22362180	CD, 18pF, 50V, K
C018	22360140	CD, 18pF, 50V, J, PH
C019	22360132	CD, 15pF, 50V, J, CH
C020	22349102	CD, 1000pF, 50V, K
C021	22488478	EL, 0.47mfd, 50V
C101	22361220	CD, 22pF, 50V, J
C102	22361120	CD, 12pF, 50V, J
C103	22361220	CD, 22pF, 50V, J
C104	22361909	CD, 9pF, 50V, D
C105	22342223	CD, 0.022mfd, 50V, Z
C107	22349332	CD, 3300pF, 50V, K
C108	22361309	CD, 3pF, 50V, D
C109	22349102	CD, 1000pF, 50V, K
C110	22361809	CD, 8pF, 50V, D
C111	22361509	CD, 5pF, 50V, D
C112	22362101	CD, 100pF, 50V, K
C113	22342223	CD, 0.022mfd, 50V, Z
C114	22342223	CD, 0.022mfd, 50V, Z
C116	22342223	CD, 0.022mfd, 50V, Z
C118	22342223	CD, 0.022mfd, 50V, Z
C119	22360329	BL, 0.022mfd, 25V, M
C120	22483101	EL, 100mfd, 10V
C121	22362101	CD, 100pF, 50V, K
C122	22485100	EL, 10mfd, 16V
C123	22483470	EL, 47mfd, 10V
C124	22342473	CD, 0.047mfd, 50V, Z
C125	22349391	CD, 390pF, 50V, K
C127	22362220	CD, 22pF, 50V, K
C128	22361809	CD, 8pF, 50V, D
C129	22342223	CD, 0.022mfd, 50V, Z
C130	22342223	CD, 0.022mfd, 50V, Z
C131	22361509	CD, 5pF, 50V, D
C132	22361220	CD, 22pF, 50V, J
C133	22321016	PP, 360pF, 50V, J
C135	22342223	CD, 0.022mfd, 50V, Z
C136	22485100	EL, 10mfd, 16V
C137	22342473	CD, 0.047mfd, 50V, Z
C201	22488478	EL, 0.47mfd, 50V
C202	22488478	EL, 0.47mfd, 50V
C203	22488228	EL, 0.22mfd, 50V
C204	22483470	EL, 47mfd, 10V
C205	22371102	MY, 1000pF, 50V, J
C206	22488339	EL, 3.3mfd, 50V
C207, 208	22360328	BL, 0.015mfd, 25V, M
C301, 302	22360330	BL, 0.033mfd, 25V, M
C303, 304	22488108	EL, 0.1mfd, 50V
C305, 306	22349222	CD, 2200pF, 50V, K
C307, 308	22349102	CD, 1000pF, 50V, K
C309, 310	22488339	EL, 3.3mfd, 50V

Symbol No.	Part No.	Description
C311, 312	22349391	CD, 390pF, 50V, K
C313, 314	22349102	CD, 1000pF, 50V, K
C315, 316	22485330	EL, 33mfd, 16V
C317, 318	22349391	CD, 390pF, 50V, K
C319, 320	22483221	EL, 220mfd, 10V
C321, 322	22372683	MY, 0.068mfd, 50V, M
C323, 324	22483470	EL, 47mfd, 10V
C325, 326	22485100	EL, 10mfd, 16V
C327, 328	22483102	EL, 1000mfd, 10V
C329	22485331	EL, 330mfd, 16V
C331, 332	22362221	CD, 220pF, 50V, K
C333, 334	22372683	MY, 0.068mfd, 50V, M
C335, 336	22360331	BL, 0.047mfd, 25V, M
C337, 338	22360322	BL, 1500pF, 25V, M
C339	22488108	EL, 0.1mfd, 50V
C341, 342	22475100	EL, 10mfd, 16V, NP
C343, 344	22488478	EL, 0.47mfd, 50V
C345, 346	22349391	CD, 390pF, 50V, K
C347, 348	22488478	EL, 0.47mfd, 50V
C349	22483221	EL, 220mfd, 10V
C350, 351	22349222	CD, 2200pF, 50V, K
C352, 353	22360333	BL, 0.1mfd, 25V, M
C354, 355	22360331	BL, 0.047mfd, 25V, M
C356, 357	22342223	CD, 0.022mfd, 50V, Z
C401, 402	22488478	EL, 0.47mfd, 50V
C403	22483470	EL, 47mfd, 10V
C404	22483101	EL, 100mfd, 10V
C405, 406	22488339	EL, 3.3mfd, 50V
C407, 408	22349102	CD, 1000pF, 50V, K
C409, 410	22349102	CD, 1000pF, 50V, K
C411, 412	22488478	EL, 0.47mfd, 50V
C413, 414	22349332	CD, 3300pF, 50V, K
C415, 416	22349472	CD, 4700pF, 50V, K
C417, 418	22349102	CD, 1000pF, 50V, K
C419, 420	22362180	CD, 18pF, 50V, K
C421, 422	22485100	EL, 10mfd, 16V
C423, 424	22349472	CD, 4700pF, 50V, K
C425, 426	22349472	CD, 4700pF, 50V, K
C427, 428	22488478	EL, 0.47mfd, 50V
C429	22483470	EL, 47mfd, 10V
C430	22485100	EL, 10mfd, 16V
C431	22483331	EL, 330mfd, 10V
C432	22342223	CD, 0.022mfd, 50V, Z
C434	22342103	CD, 0.01mfd, 50V, Z
C435	22488339	EL, 3,3mfd, 50V
C436	22488339	EL, 3,3mfd, 50V
C437	22360331	BL, 0.047mfd, 25V, M
C438	22342223	CD, 0.022mfd, 50V, Z
C439	22360331	BL, 0.047mfd, 25V, M
C440	22485330	EL, 33mfd, 16V

Symbol No.	Part No.	Description
C443	22488478	EL, 0.47mfd, 50V
C501	22371153	MY, 0.015mfd, 50V, J
C502	22371123	MY, 0.012mfd, 50V, K
C503	22483101	EL, 100mfd, 10V
C504	22371272	MY, 2700pF, 50V, J
C601	22349332	CD, 3300pF, 50V, K
C602	22485220	EL, 22mfd, 16V
C603	22488339	EL, 3.3mfd, 50V
C604	22342223	CD, 0.022mfd, 50V, Z
C605	22488479	EL, 4.7mfd, 50V
C606	22488478	EL, 0.47mfd, 50V
C607	22488339	EL, 3.3mfd, 50V
C608	22342223	CD, 0.022mfd, 50V, Z
C701, 702	22488478	EL, 0.47mfd, 50V
C703, 704	22488109	EL, 1mfd, 50V
C705	22483221	EL, 220mfd, 10V
C801	22349331	CD, 330pF, 50V, K
C802	22488339	EL, 3.3mfd, 50V
C803	22342473	CD, 0.047mfd, 50V, Z
C901	22342223	CD, 0.022mfd, 50V, Z
C902	22483331	EL, 330mfd, 10V
C903	22342223	CD, 0.022mfd, 50V, Z
C904	22485101	EL, 100mfd, 16V
⚠ C905	22486222	EL, 2200mfd, 25V
⚠ C906, 907	22342223	CD, 0.022mfd, 50V, Z
C908	22342223	CD, 0.022mfd, 50V, Z
C909	22485101	EL, 100mfd, 16V
C910	22342223	CD, 0.022mfd, 50V, Z
C911	22342473	CD, 0.047mfd, 50V, Z

RESISTORS

All resistors are carbon film 1/4W, ±5% unless otherwise noted.

PRC is short for the printed resistor circuit.

K = 1000, M = 1000000.

R001	22555103	10K ohm	(PRC)
R002	22555104	100K ohm	(PRC)
R003	22555104	100K ohm	(PRC)
R101	22555682	6.8K ohm	(PRC)
R102	22555682	6.8K ohm	(PRC)
R103	22555682	6.8K ohm	(PRC)
R104	22555470	47 ohm	
R105	22555151	150 ohm	(PRC)

Symbol No.	Part No.	Description
R107	22555101	100 ohm (PRC)
R108	22555182	1.8K ohm (PRC)
R109	22555182	1.8K ohm (PRC)
R110	22555279	2.7 ohm, TA7614AP-W
R110	22555479	4.7 ohm, TA7614AP-Y
R111	22555151	150 ohm (PRC)
R112	22555151	150 ohm (PRC)
R113	22555151	150 ohm (PRC)
R114	22555332	3.3K ohm (PRC)
R116	22555820	82 ohm
R117	22555103	10K ohm (PRC)
R118	22555274	270K ohm (PRC)
R119	22555333	33K ohm (PRC)
R120	22555821	820 ohm (PRC)
R121	22555223	22K ohm (PRC)
R122	22625420	50K ohm, B, Variable, Fine Tuning
R123	22555103	10K ohm (PRC)
R124	22555223	22K ohm (PRC)
R125	22555122	1.2K ohm
R126	22555153	15K ohm
R127	22555473	47K ohm
R128	22555124	120K ohm
R201	22555102	1K ohm (PRC)
R202	22555682	6.8K ohm (PRC)
R203	22658498	10K ohm, B, Semi-fixed Variable
R204	22555104	100K ohm (PRC)
R205	22555104	100K ohm, TA7323P-Y
R205	22555154	150K ohm, TA7323P-O
R206, 207	22555332	3.3K ohm (PRC)
R208, 209	22555104	100K ohm (PRC)
R210	22555151	150 ohm
R211	22555102	1K ohm
R212, 213	22555561	560 ohm
R215	22555152	1.5K ohm (PRC)
R301, 302	22555223	22K ohm (PRC)
R303, 304	22555272	2.7K ohm (PRC)
R305, 306	22651537	100K ohm, A, Variable, Bass
R307, 308	22651536	50K ohm, B, Variable, Volume
R309, 310	22555472	4.7K ohm (PRC)
R311, 312	22555221	220 ohm (PRC)
R313, 314	22555153	15K ohm (PRC)
R315, 316	22555103	10K ohm (PRC)
R317	22555392	3.9K ohm (PRC)
R319, 320	22555121	120 ohm
R321, 322	22555472	4.7K ohm (PRC)
R323, 324	22651537	100K ohm, A, Variable, Treble
R325	22625420	50K ohm, B, Variable, Balance
R326	22555101	100 ohm (PRC)
R327, 328	22555474	470K ohm
R329, 330	22555332	3.3K ohm
R331, 332	22555271	270 ohm
R333, 334	22555682	6.8K ohm
R335, 336	22555562	5.6K ohm
R401, 402	22555103	10K ohm (PRC)
R403, 404	22555473	47K ohm (PRC)
R405, 406	22555271	270 ohm (PRC)
R407, 408	22555102	1K ohm (PRC)
R409, 410	22555222	2.2K ohm (PRC)
R411, 412	22555472	4.7K ohm (PRC)
R414	22555332	3.3K ohm (PRC)
R415	22555182	1.8K ohm (PRC)
R416, 417	22555223	22K ohm (PRC)
R418, 419	22555225	2.2M ohm
R420, 421	22555151	150 ohm
R422, 423	22555103	10K ohm
R424, 425	22555153	15K ohm (PRC)
R426, 427	22555473	47K ohm
R428, 429	22555334	330K ohm
R430, 431	22555124	120K ohm (PRC)
R432, 433	22555391	390 ohm
R434, 435	22555392	3.9K ohm
R436, 437	22555223	22K ohm
R438, 439	22555681	680 ohm
R440, 441	22555103	10K ohm (PRC)
R442, 443	22555182	1.8K ohm (PRC)
R444, 445	22555332	3.3K ohm (PRC)
R446, 447	22555222	2.2K ohm (PRC)
R448, 449	22555223	22K ohm (PRC)
R450	22555225	2.2M ohm
R451	22555103	10K ohm (PRC)
R452	22555103	10K ohm (PRC)
R453	22555102	1K ohm (PRC)
R454	22555102	1K ohm (PRC)
R455	22555103	10K ohm (PRC)
R456	22555332	3.3K ohm (PRC)
R457	22555102	1K ohm (PRC)
R458	22555103	10K ohm (PRC)
R459	22555102	1K ohm (PRC)
R460	22555103	10K ohm (PRC)
R461	22555331	330 ohm (PRC)
R462	22555331	330 ohm (PRC)
R463, 464	22555103	10K ohm (PRC)
R466	22555152	1.5K ohm
R467	22555223	22K ohm (PRC)
R468	22555102	1K ohm (PRC)
R469	22555105	1M ohm
R470, 471	22555333	33K ohm (PRC)
R472	22545330	33 ohm
R501	22545820	82 ohm
R502	22555273	27K ohm

Symbol No.	Part No.	Description
R503	22555152	1.5K ohm
R504	22555220	22 ohm
R601	22555103	10K ohm (PRC)
R602	22555103	10K ohm (PRC)
R603	22555274	270K ohm (PRC)
R604	22555122	1.2K ohm (PRC)
R605	22555471	470 ohm (PRC)
R606	22555101	100 ohm (PRC)
R607	22555222	2.2K ohm (PRC)
R608	22555224	220K ohm (PRC)
R609	22555224	220K ohm (PRC)
R610	22555222	2.2K ohm (PRC)
R611	22555101	100 ohm (PRC)
R612	22555104	100K ohm (PRC)
R613	22555102	1K ohm (PRC)
R614	22555681	680 ohm (PRC)
R701, 702	22555823	82K ohm (PRC)
R703, 704	22555103	10K ohm (PRC)
R705, 706	22555103	10K ohm (PRC)
R707, 708	22555103	10K ohm (PRC)
R709, 710	22555122	1.2K ohm (PRC)
R711, 712	22555122	1.2K ohm (PRC)
R713, 714	22555122	1.2K ohm (PRC)
R715, 716	22555122	1.2K ohm (PRC)
R717, 718	22555122	1.2K ohm (PRC)
R719, 720	22555473	47K ohm (PRC)

Symbol No.	Part No.	Description
R801	22555473	47K ohm (PRC)
R802	22555473	47K ohm (PRC)
R803	22555183	18K ohm (PRC)
R804	22555473	47K ohm (PRC)
R805	22555223	22K ohm (PRC)
R806	22555102	1K ohm (PRC)
R807	22555223	22K ohm (PRC)
R901	22545569	5.6 ohm
R902	22545330	33 ohm
R903	22555821	820 ohm (PRC)
R904	22555151	150 ohm
		ACCESSORIES
AC01	22105356	Tape, C30MSC, Demonstration
⚠ AC02	22176532	Cord, Power Supply, C2SET-M
AC03	22902984	Owner's Manual
AC04	22906254	Pop Label

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PRINTED IN JAPAN 22955997, May,. 1981 Ⓢ